ORDER NO. VRD0108036C2

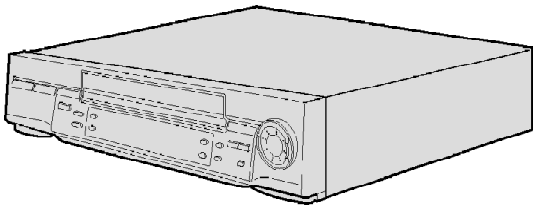
Service Manual

Video Cassette Recorder

Panasonic S-VHS VHS PAL 625 Hi-Fi

NV-HS870EG / NV-HS870B / NV-HS870EC

Z-MECHANISM



SPECIFICATIONS

SPECIFICATIONS

ITEM	SPECIFICATION		ITEM	SPECIFICATION
POWER	SOURCE: 220-240 V AC 50/60 Hz		AUDIO	HEAD: 1 Stationary head (Normal-mono only) 2 channels (Hi-Fi Sound-Stereo)
	CONSUMPTION: 23 watts COMSUMPTION WHEN IN STANDBY MODE: Approx. 3W (NV-HS870EG/EC)			INPUT: EURO AV (AV1/AV2) Connector (21 pin x 2) More than -6dBV (500 mV), 10 kΩ AUDIO IN (AV3:FRONT) Connector (Phone type) More than -6dBV (500 mV), 10 kΩ
RECORDING SYSTEM	2 rotary heads, helical scanning system			OUTPUT: AUDIO OUT Connector (Phone type) -6 dBV (500mV), Less than 1kΩ EURO AV (AV1/AV2) Connector (21 pin x 2) -6 dBV (500mV), Less than 1kΩ
	PAL		TAPE FORMAT	S-VHS/VHS Cassette Tape (Tape width 12.7 mm)
TV TUNER SYSTEM	NV-HS870EG/EC	VHF: CHE2-CHE12 CHA-CHH2 [ITALY] (PAL/SECAM B) UHF: CH21-CH69 (PAL/SECAM G) CATV: CHS01-CHS41 (PAL/SECAM B)	TAPE SPEED	SP:23.39 mm/s LP: 11.695 mm/s EP:7.796 mm/s Record/Playback Time: SP: 4 hours with 240 min. type tape LP: 8 hours with 240 min. type tape EP: 12 hours with 240min type tape FF/REW Time: 60 sec. with 180 min. type tape
	NV-HS870B	UHF: CH21-CH68 (PAL I)		
RF OUT SYSTEM	NV-HS870EG/EC	UHF: CH21-CH69 (PAL/SECAM G) 71 ± 3 dBμ, 75 Ω close		
	NV-HS870B	UHF: CH21-CH68 (PAL I) 71 ± 3 dBμ, 75 Ω close		
VIDEO	HEADS: 4 rotary heads 1 pair for recording and playback (L-R heads) 1 pair for trick play (L'-R' heads)		OPERATING TEMPERATURE	5°C - 40°C
	INPUT: EURO AV (AV1/AV2) Connector (21 pin x 2) 1.0 Vp-p, 75 Ω terminated S-VIDEO IN (AV3:FRONT) Connector (S4P) 1.0 Vp-p, 75 Ω terminated VIDEO IN (AV3:FRONT) Connector (Phone type) 1.0 Vp-p, 75 Ω terminated		OPERATING HUMIDITY	35% - 80%
	OUTPUT: EURO AV (AV1/AV2) Connector (21 pin x 2) 1.0 Vp-p, 75 Ω terminated S-VIDEO OUT Connector (S4P) 1.0 Vp-p, 75 Ω terminated VIDEO OUT Connector (Phone type) 1.0 Vp-p, 75 Ω terminated		DIMENSIONS	430 (W)×87(H)×289(D) mm
			WEIGHT	3.5 kg
			STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. AC Mains Lead 1 pc. Infra-red Remote Controller 1 pc. S-VIDEO Cable 1 pc. EDIT Cable 1 pc. Ferrite Core (NV-HS870R)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. INTRODUCTION

This service manual contains technical information which will allow service personnel to understand and service this model.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

Note:

1. **Adjustment procedures, Disassembly Procedures and Assembly Procedures for Mechanism Chassis are separate volume from this service manual. / Please refer to the service manual for Z-Mechanism Chassis. (Order No. VRD9802005C2)**
2. **The Model No. is indicated on the Schematic Diagram and Circuit Board Diagrams as follows.**

Model No.	Indication Mark
NV-HS870EG	(EG)
NV-HS870B	(B)
NV-HS870EC	(EC)

2. GENERAL DESCRIPTIONS

2.1. SERVICE CAUTION

2.1.1. REPLACING IC6002/EEPROM

When the EEPROM: IC6002 is replaced, applicable model code, option code, tuning channel data and electrical adjustment data will not be available.
Therefore, enter and/or adjust the necessary data after replacing IC6002 by referring following procedure.

STEP1.REPLACE THE IC6002

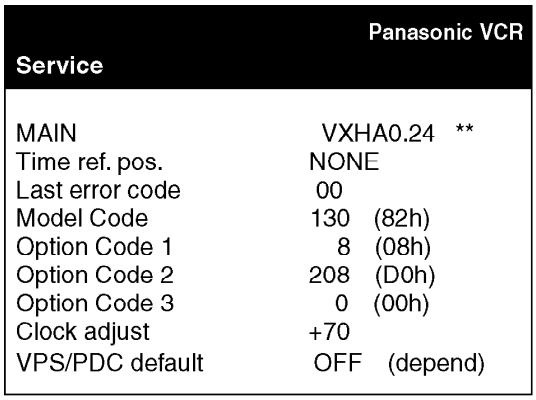
1. **Take a note that stored TV broadcast channels.**
2. **Remove the C.B.A. with Mechanism unit by referring the Disassembly procedure.**
3. **Disconnect the AC plug and replace the IC6002.**

STEP2.INPUT THE MODEL & OPTION CODE

1. Set up the applicable model code and option code by ordering the following table.

PROCEDURE	F.I.P. DISPLAY
Turn on the Service Mode **1.Press the FF key and the EJECT key simultaneously for more than 3 seconds.**	
Activate the Service Mode 2 **2.While keep placing FF key, press the EJECT key in twice.**	
Activate the Entering Mode. **3.Press the EJECT key for more than 3 seconds.**	
Set the Mode 2. **4.Press the CH UP key in twice.**	
Display the Setting Code. **5.Press the POWER Button to turn the power on.**	 **(Colon starts flashing)**
Enter the Model and Option Code. **6.Service Screen is displayed on the monitor.** **7.Set the applicable Model and Option code by using REW, PLAY, STOP and FF keys on theRemote Controller. (See Fig.S1 & S2)**	
Exit from Service Mode. **8.Press the POWER Button to turn the power off.** **9. Press FF and EJECT keys simultaneously in 6 times.**	 **(Normal Indication)**

Fig.S1 Service Secreen (sample)



Model No.	Model Code	Option Code 1	Option Code 2	Option Code 3
NV-HS870EG	177 (B1h)	8 (08h)	240 (F0h)	0 (00h)
NV-HS870B	179 (B3h)	40 (28h)	240 (F0h)	0 (00h)
NV-HS870EC	178 (B2h)	8 (08h)	240 (F0h)	0 (00h)

Fig. S2 Model Code & Option Code

NOTE:

1. **Tune the TV Broadcasting channels by referring the memo.**
2. **Since all electrical adjustment data is still not available, perform the Electrical Adjustment continuously.**

WHEN REPLACING THE MAIN C.B.A.

Since the user's Tape Library data is stored in IC6002;EEPROM, swap the EEPROM taking from Original Main C.B.A. and mount it onto the New Main C.B.A. to keep maintain the user's Library Data by ordering the following procedure.

1. **Take the IC6002; EEPROM from the new Main C.B.A. (to be used as replacement.) and keep it aside.**
2. **Take the IC6002; EEPROM from the original Main C.B.A. (to be replaced).**
3. **Mount the EEPROM being taken from original C.B.A. to the new Main C.B.A.(to be used as replacement.)**
4. **Install the new Main C.B.A. to the VCR.**

When ordering the above procedure, setting of the model code, option code, tuning channel can be skipped. / However, all electrical adjustment data is unique value in accordance with a deck, perform the Electrical Adjustment continuously.

2.1.2. CYLINDER UNIT REPLACEMENT

1. CYLINDER UNIT REPLACEMENT

A. Remove the mechanism unit from MAIN C.B.A./Chassis by referring "SECTION 2. Disassembly Procedure".

B. Remove the 3 screws (A) of the CYLINDER UNIT with a screw driver.

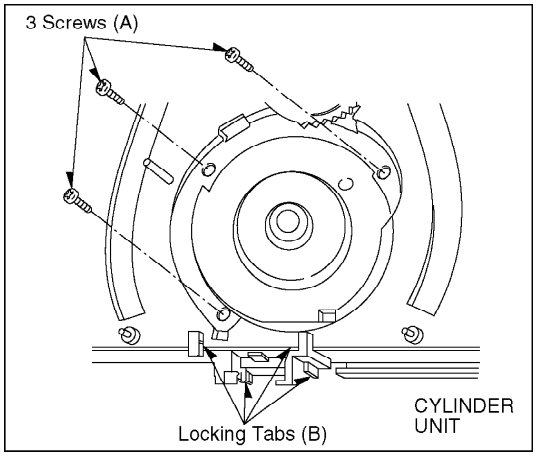
C. Unlock the 4 locking tabs (B) and disconnect the Cylinder fiexible card from the FPC Holder.

D. Remove the CYLINDER UNIT.

CAUTION:

Handle the Cylinder fiexible card with care. When it damaged, you should replace whole Cylinder unit.

Fig. S3



2. UPPER CYLINDER DISASSEMBLY

A. Remove 2 screws (A).

B. Remove the Cylinder Stator Unit.

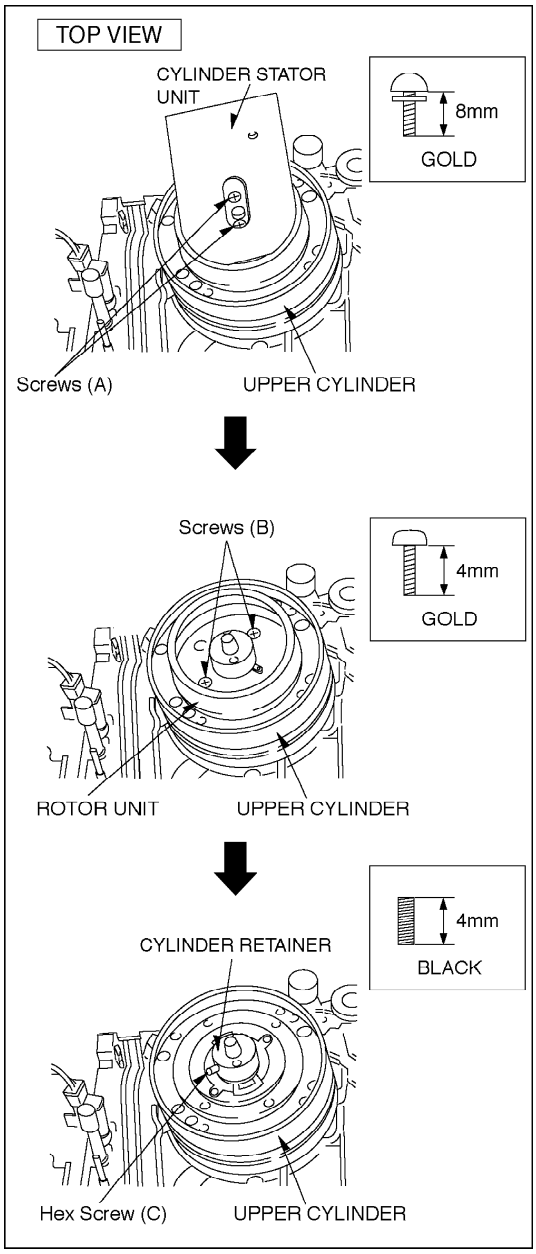
C. Remove 2 screws (B).

D. Remove the Cylinder Rotor Unit.

E. Loose Hex screw (C) (1.5 mm) and remove the CYLINDER RETAINER.

F. Remove the Upper Cylinder.

Fig. S4



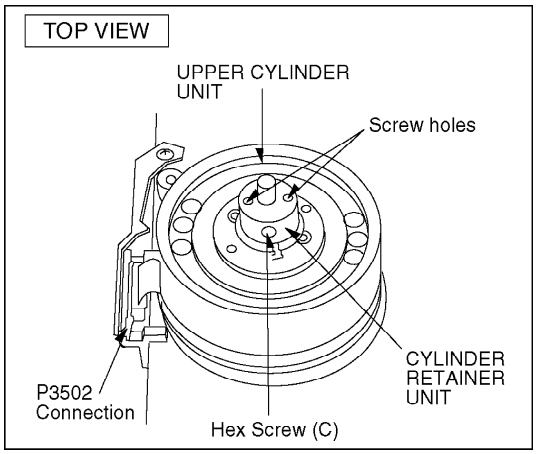
3. UPPER CYLINDER ASSEMBLY

When reassembling, perform the steps in the reverse order.

Notes:

1. **Install the Cylinder Retainer so that the 2 holes on top of the Cylinder Retainer are at right angles with the P3502 Connection.**
2. **Tighten the Hex screw (C) (1.5 mm) while pressing down on top of the Cylinder Retainer.**

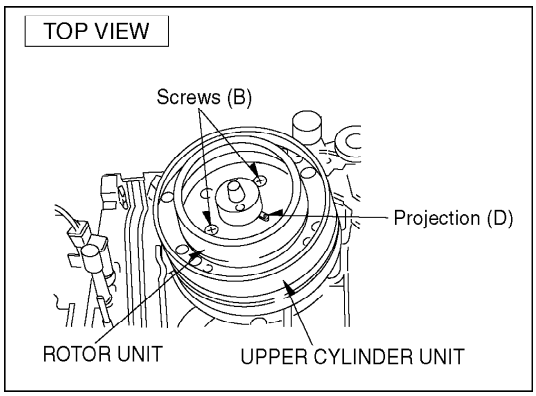
Fig. S5



3. Install the Cylinder Rotor Unit so that the inner hole of the Cylinder Rotor Unit fits to the small projection (D) on top of the Upper Cylinder.

4. Tighten 2 screws (B).

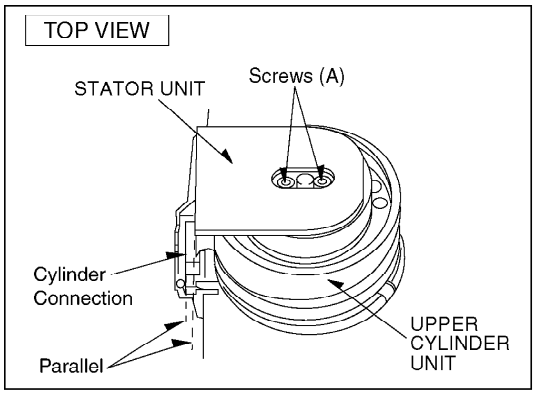
Fig. S6



5. install the Cylinder Stator Unit.

6. Tighten 2 screws (A).

Fig. S7



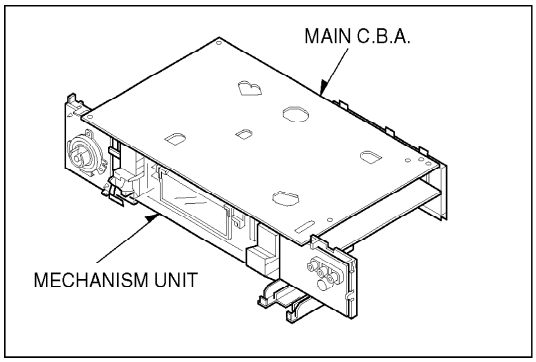
7. Confirm the PG SHIFTER ADJUSTMENT with the alignment tape

(PAL: VFJ8125H3F) and adjust it if necessary.

2.1.3. CHECKING OF MAIN C.B.A.

When servicing the MAIN C.B.A., take out the MAIN C.B.A. and mechanism from the frame and turn over.

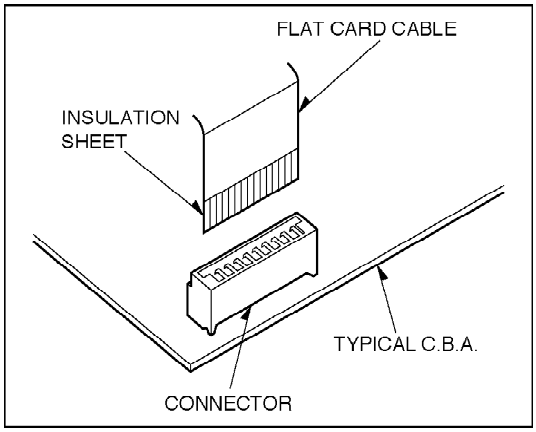
Fig. S8



2.1.4. FLAT CARD CABLE INSTALLATION

When installing the Flat Card Cable on the connector, install the Flat Card Cable with the cable contacts facing the connector contacts.

Fig. S9



2.2. REMOVAL OF CASSETTE TAPE

There are 2 ways to remove a cassette tape.

1. Service Information Display Operation

A. Press the FF and EJECT keys simultaneosly for 3 seconds and set the Service Mode 7.

B. Press STOP key in order to rotate the Loading Motor for unloading operation. (Pay an attention of tape slack)

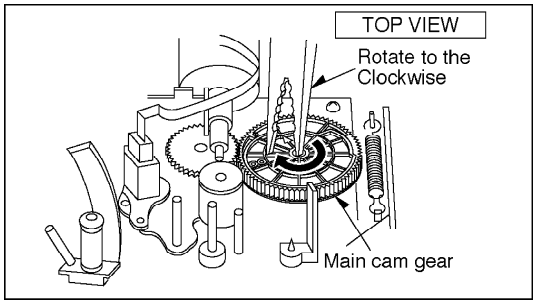
2. Manual Operation

A. Disconnect the AC Mains Lead and remove the Top Panel.

B. Rotate the Main Cam Gear clockwise until the Loading Posts

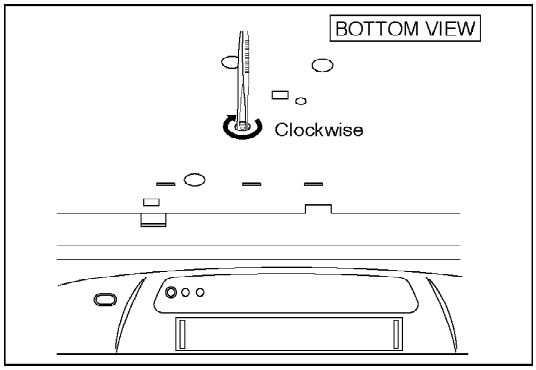
move to fully unloaded position as shown in Fig. S10. (Tape is remaining)

Fig. S10



C. Rotate the Capstan Motor clockwise from the bottom side to take up the tape.

Fig. S11



D. Rotate the Main Cam Gear clockwise until the cassette tape is ejected.

2.3. INTRODUCTION OF VIDEO HEAD CLEANING CASSETTE / (POLISHING TYPE)

1. **We are pleased to introduce Panasonic Video Head Cleaning Cassette, VFK0923FT [for service purposes] and VFK0923FSE [for end users] for all VHS/SVHS VCP and VCR.**
2. **These cleaning cassettes are exclusive removing the hard and sticky clogging on video heads.**
3. **These improve the efficiency of video head cleaning service and shortening cleaning time for end users.**

VFK0923FT (For Service usage)	
Type of Cassette	**Full VHS Cassette**
Cleaning Time	**10 Seconds/Time**
Tape Length	**20 m**
Usability in a Path	**180 Times**

VFK0823FSE (For end users)	
Type of Cassette	**Full VHS Cassette**
Cleaning Time	**10 Seconds/Time**
Tape Length	**3.34 m**
Usability in a Path	**30 Times**

VFK0823FSE (For end users)

Note:

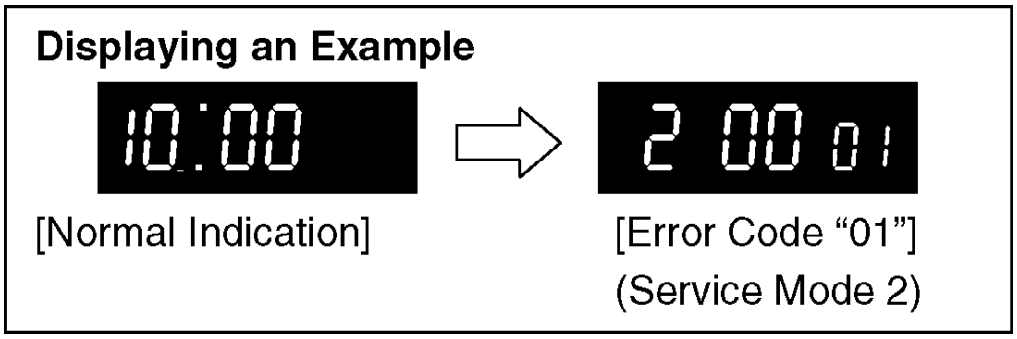
The tape material itself is the same in both types.

2.4. SELF-DIAGNOSIS RESULT DISPLAY

The "SELF-DIAGNOSIS RESULT DISPLAY & MEMORY function is built in this VTR.
It means that when the VCR detects undesirable condition, it can be displayed a “Error code (Two numbers from the left)” with Service Mode 2.
Since the "Error code" is stored in the EEPROM, it can be displayed although after disconnected the AC leads. It can be displayed with Service Mode 2.
(If a second error had been detected, only the most recent error can be displayed.)
For more details, refer to the Service Manual for Z-Mechanism Chassis Order number VRD9612M129.

NOTE:

To erase the memorized “ERROR” code, press the FF and EJECT keys simultaneously for more than 5 seconds.



INDICATION	CAUSE	REMEDY/CHECK
01	After cylinder lock is detected, the cylinder does not start rotating again even after tape unloading.	Check the cylinder motor drive circu
02	Cassette tape is not wound up during the tape unloading except EJECT mode.	Check the capstan motor drive circu
03	Mechanism locks during mode transition except EJECT mode.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment. 3. Check the mode switch.
04	Mechanism locks during tape unloading.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment.
06	Mechanism locks after tape unloading in EJECT mode.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment for cass
07	During recording mode, recording signal is less than the normal condition.	Protection of the over-current flowin transistor which produces the powe for recording mode.
08	Recording circuit works except recording mode.	Check the recording circuit.
16	Cylinder lock detection.	Check the cylinder unit and the cylir drive circuit.
17	Supply reel mechanism lock detection	Check the supply reel mechanism ar supply reel circuit.
18	Take-up reel mechanism lock detection	Check the Take-up reel mechanism a Take-up reel circuit.
2*	PG shifter automatic adjustment error.	Check the servo/system control circ cylinder unit.

Fig. T1 Self-Test indication Display

2.5. CAUTION FOR AC MAINS LEAD (NV-HS870B)

3. ADJUSTMENT PROCEDURES

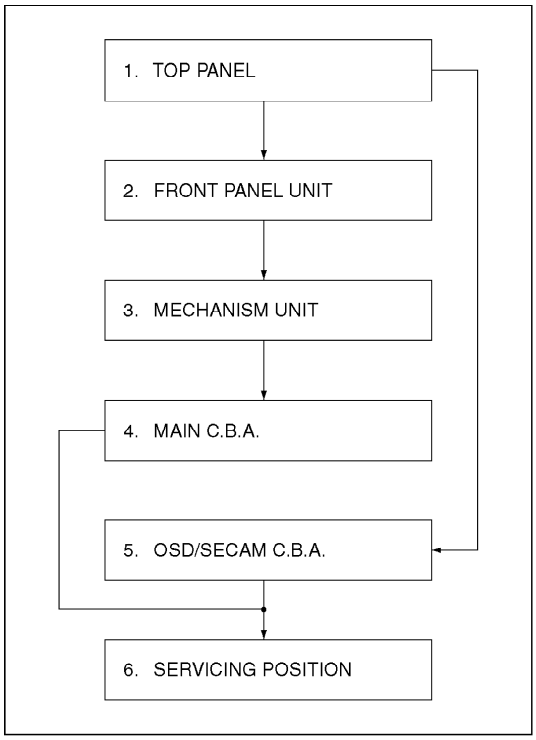
3.1. DISASSEMBLY METHOD

3.1.1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps of the cabinet parts and the circuit boards in order to find the necessary items for servicing.

When reassembling, perform the steps in the reverse order.

Fig. D1

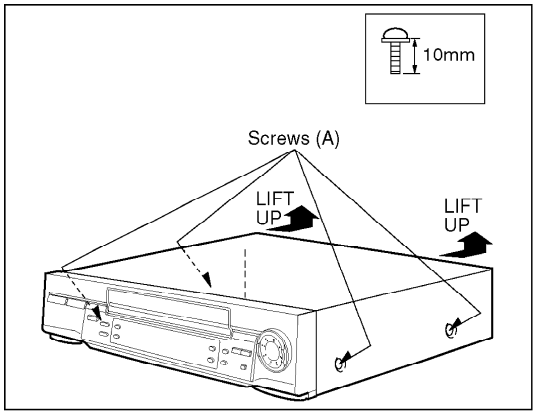


3.1.2. DETAIL OF DISASSEMBLY METHOD

1. REMOVAL OF THE TOP PANEL

Remove	**4 Screws (A)**

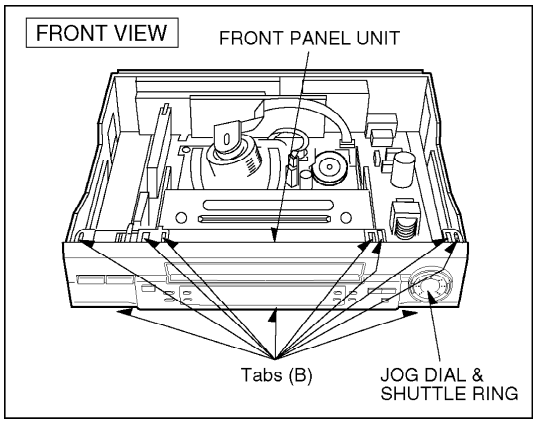
Fig.D2



2. REMOVAL OF THE FRONT PANEL UNIT

Remove	**JOG DIAL & SHUTTLE RING**
Unlock	**10 Tabs (B)**

Fig. D3



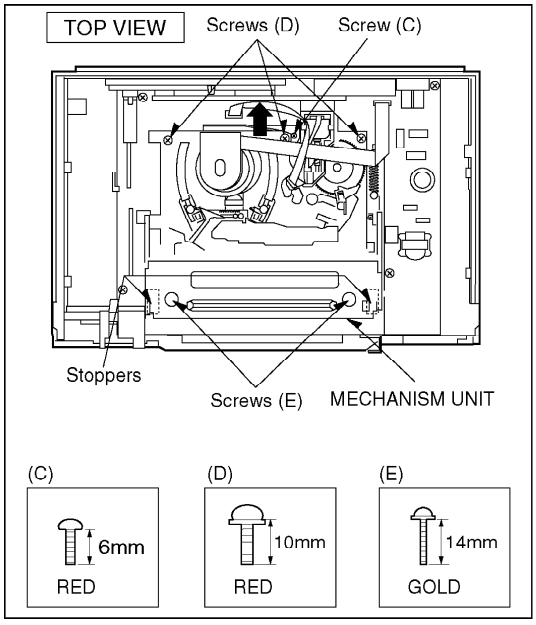
3. REMOVAL OF THE MECHANISM UNIT

Remove	**Screw (C)**
Remove	**3 Screws (D)**
Remove	**2 Screws (E)**

Note:

1. **Keep pressing 2 stoppers on Cassette Holder Plate and Press Cassette Holder Plate to the rear.**
2. **Remove the Mechanism Unit after bend the Cylinder Shield in the direction of the arrow.**

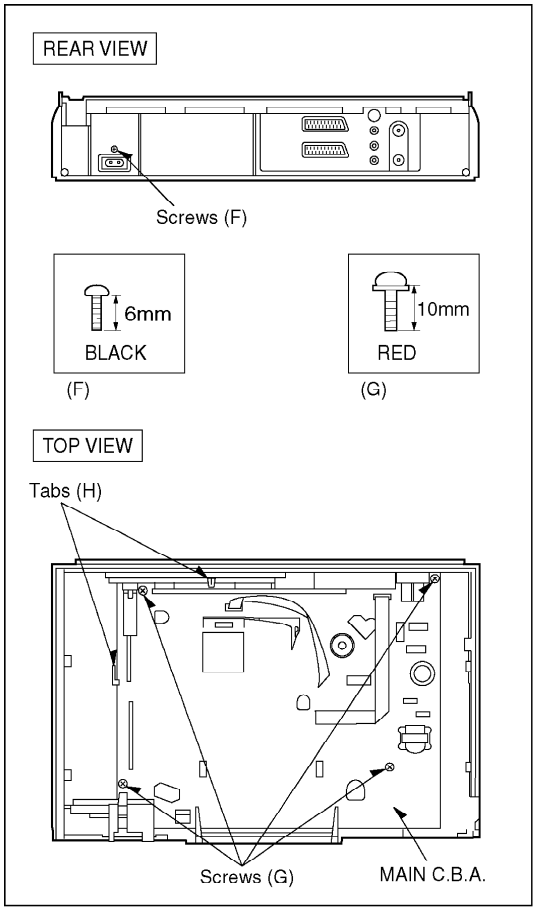
Fig. D4



4. REMOVAL OF THE MAIN C.B.A.

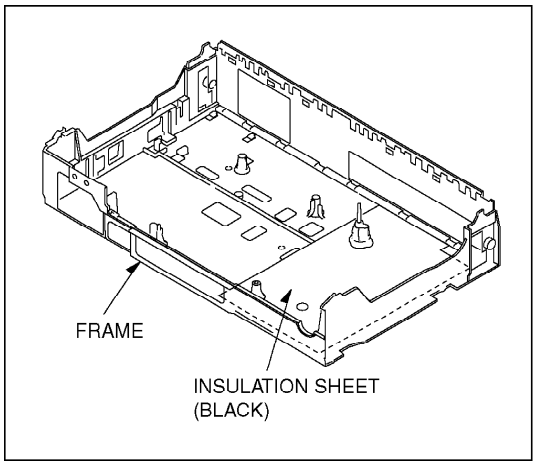
Remove	**Screw (F)**
Remove	**4 Screws (G)**
Unlock	**2 Tabs (H)**

Fig. D5



NOTE:
Before mounting the MAIN C.B.A. onto the frame, be sure to confirm that the insulation sheet is mounted on the frame as shown in Fig. D6.

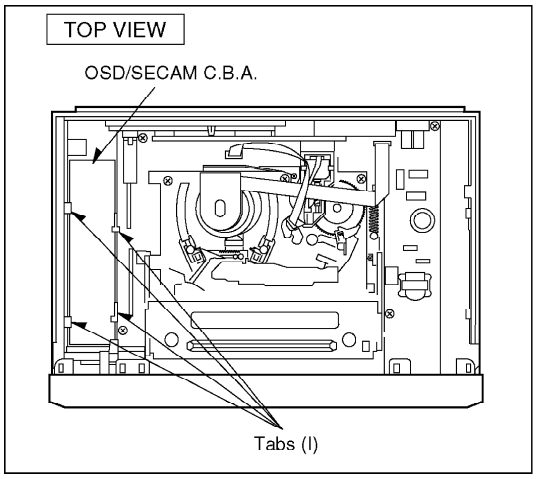
Fig. D6



5. REMOVAL OF THE OSD/ SECAM C.B.A.

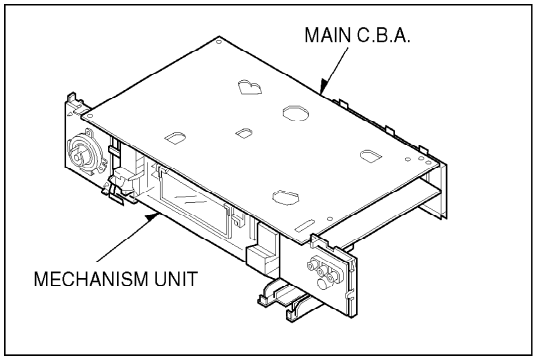
Unlock	**4 Tabs (I)**

Fig. D7



6. SERVICING POSITION

Fig. D8



3.2. MECHANICAL ADJUSTMENT PROCEDURES

Refer to the Service Manual for Z-Mechanism Chassis. / (Order No. VRD9802005C2)

3.3. ELECTRICAL ADJUSTMENT PROCEDURES

3.3.1. TEST EQUIPMENT

The following equipments are required for Electrical Adjustments.

1. Dual-Trace Oscilloscope
   - Voltage Range: 0.005-5V/div
   - Frequency Range: DC-35MHz
   - Probes: 10:1 / 1:1
2. Frequency Counter
   - Frequency Range: 0-10MHz
   - Probes: 1:1
3. Universal Counter
4. Digital Volt Meter (D.V.M.)
5. Video Sweep Generator
6. Sinewave Generator
7. Video Pattern Generator
8. Monitor TV
9. DC Power Supply
10. VHS/S-VHS Blank Tape
11. VHS Alignment Tape
    - Parts No.: VFJ8125H3F(PAL)

3.3.2. VCR SETTING

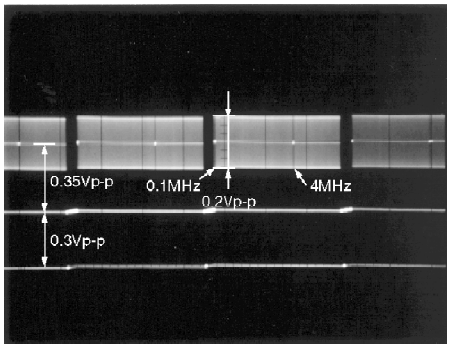
When no indication in the procedure, set each selector as follows.

1. TAPE SPEED: SP
2. CHANNEL: AV1/AV2/AV3
   (Set to signal input terminal number)
3. S-VHS SW: ON

3.3.3. ADJUSTMENTS

ITEM	TP	ADJ.	MODE	INPUT	TAPE	M. EQ.	SPEC	REMARKS
PG SHIFTER ADJUSTMENT	---	---	PLAYBACK	---	ALIGNMENT TAPE (PAL)	---	---	Refer to procedure as shown in Fig. E5.
S-VHS FREQUENCY RESPONSE ADJUSTMENT	VIDEO OUT (TP3021)	---	SP/LP PLAYBACK (SELF-REC)	VIDEO SWEEP (See Fig. E1)	S-VHS BLANK TAPE	OSCILLO SCOPE/ VIDEO SWEEP GENERATOR	SP:-4.5+-1(dB) (50~70%) LP:-6.0+-1(dB) (40~60%) (See Fig.E2)	Refer to the procedure as shown in Fig. E6.
VHS FREQUENCY RESPONSE ADJUSTMENT	VIDEO OUT (TP3002)	---	SP/LP PLAYBACK (SELF-REC)	VIDEO SWEEP (See Fig. E3)	VHS BLANK TAPE	OSCILLO SCOPE/ VIDEO SWEEP GENERATOR	SP: 0+-1 (dB) (90~110%) LP: 0+-1 (dB) (90~110%) (See Fig. E4)	Refer to the procedure as shown in Fig. E7.
FM AUDIO LEVEL METER ADJUSTMENT	MONITOR TV	---	STOP	-6dBV (0.5Vrms) SINE WAVE 1kHz	---	---	---	Refer to the procedure as shown in Fig. E8.

Fig.E1



CONDITION: BURST SIGNAL OFF / 75ohm TERMINATED

Fig.E2

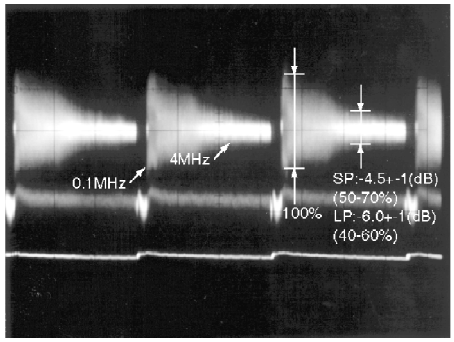
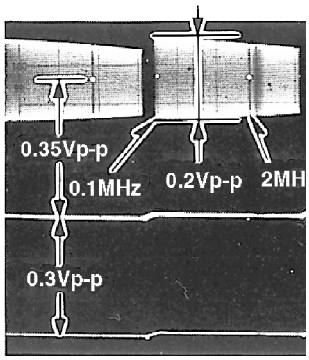
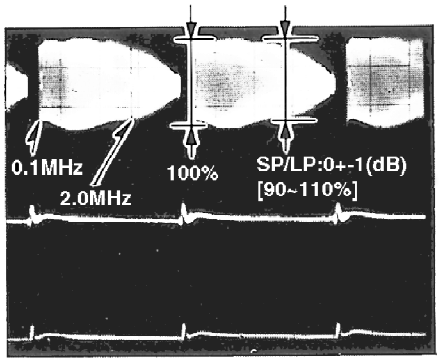


Fig.E3



CONDITION: BURST SIG
75ohm TERMI

Fig.E4



3.3.4. PG SHIFTER ADJUSTMENT / (AUTOMATIC)

PROCEDURES	FIP DISPLAY
Press the FF and EJECT Keys simultaneously for 3 seconds.	
Press the FF and EJECT Keys simultaneously twice.	
Press the EJECT key for 3 seconds.	
Press the CH UP key once.	
Insert the Alignment cassette tape. (PAL:VFJ8125H3F)	
When the sequence of the automatical adjustment has been terminated, the following action has been made. *SUCCEED: The cassette tape is ejected. *ERROR : The "F2"is displayed on the FIP. (Check the Servo/Syscon circuit and Cylinder unit.)	
Release the Service mode by pressing the EJECT and FF keys simultaneously in 6 times until the FIP becomes normal indication.	

Fig. E5

3.3.5. S-VHS VIDEO FREQUENCY RESPONSE ADJUSTMENT

PROCEDURES	FIP DISPLAY
Set the S-VHS SW to ON. / Insert the S-VHS BLANK TAPE. / Input the Video sweep signal (See Fig. E1) to AV3 (S-VIDEO IN) and record it in SP and LP.	
Press the FF and EJECT Keys simultaneously for 3 seconds.	
Press the FF and EJECT Keys simultaneously twice.	
Press the EJECT key for 3 seconds.	
Press the CH UP and/or CH DOWN key until "11" is displayed on FIP.	
Insert the Self-recorded tape and playback it. (SP/LP mode)	
Connect the Oscilloscope to: *CH1....Video Out (TP3021). *CH2....V.FREQ.(TW6002)	
Press the "4" key on the remote controller. (Confirm that TW6002 becomes high(2.5V)).	
Adjust the Frequency response by pressing the "2"(increase) and/or "8"(decrease) key on the Remote Controller. (See Fig.E2)	
Store the Adjusted value by pressing the "5" key on the Remote Controller.	
Release the Service mode by pressing the EJECT and FF keys simultaneously in 6 times until the FIP becomes normal indication.	

Fig. E6

3.3.6. VHS VIDEO FREQUENCY RESPONSE ADJUSTMENT

PROCEDURES	FIP DISPLAY
Set the S-VHS SW to OFF. / Insert the VHS Blank Tape. / Input the Video sweep signal (See Fig. E3) to AV1 (VIDEO IN) and record it in SP and LP.	
Press the FF and EJECT Keys simultaneously for 3 seconds.	
Press the FF and EJECT Keys simultaneously twice.	
Press the EJECT key for 3 seconds.	
Press the CH UP and/or CH DOWN key until "11" is displayed on FIP.	
Insert the Self-recorded tape and playback it. (SP/LP mode)	
Connect the Oscilloscope to: *CH1....Video Out (TP3002). *CH2....V.FREQ.(TW6002)	
Press the "4" key on the remote controller. (Confirm that TW6002 becomes high(2.5V)).	
Adjust the Frequency response by pressing the "2"(increase) and/or "8"(decrease) key on the Remote Controller. (See Fig.E4)	
Store the Adjusted value by pressing the "5" key on the Remote Controller.	
Release the Service mode by pressing the EJECT and FF keys simultaneously in 6 times until the FIP becomes normal indication.	

Fig. E7

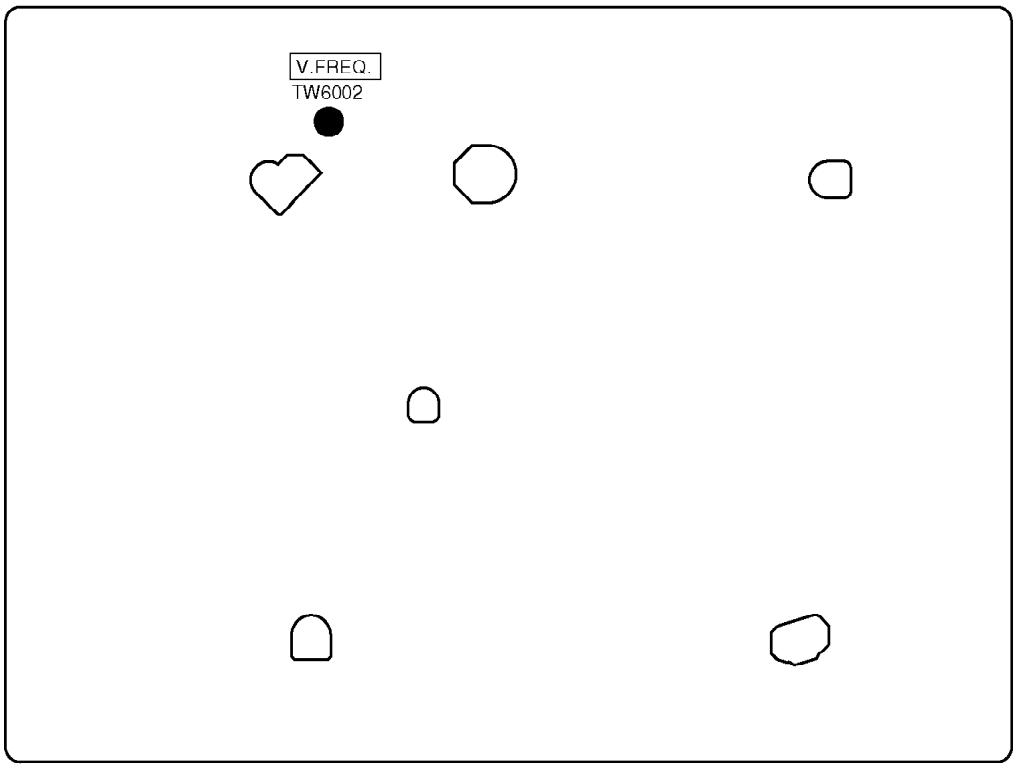
3.3.7. FM AUDIO LEVEL METER ADJUSTMENT

PROCEDURES	FIP DISPLAY
Supply 1kHz/-6dBV (0.5Vrms) sine wave to AV1,AV2 or AV3[AUDIO IN(R&L)] . Select the audio input. Connect the monitor scope to VIDEO OUT terminal.	
Press the FF and EJECT Keys simultaneously for 3 seconds.	
Press the FF and EJECT Keys simultaneously twice.	
Press the EJECT Key for 3 seconds.	
Press the CH UP and/or CH DOWN Key until "4" is displayed on FIP.	
Press the PLAY Key of the Remoete Controller to send the PLAY KEY SIGNAL . Then the FM AUDIO LEVEL METER ADJUSTMENT will be started automatically.	
When the sequence of the automatical adjustment has been terminated, the following action has been made. *SUCCEED: The OSD u-com memorize this voltage to EEPROM as / standardvoltage, and "REC VR screen" is displayed on / the monitor TV. *FAILURE: “Pleaseinsert video tape!” screen is displayed on the / monitor TV.	
Release the Service mode by pressing the EJECT and FF keys simultaneously in 6 times until the FIP becomes normal indication.	

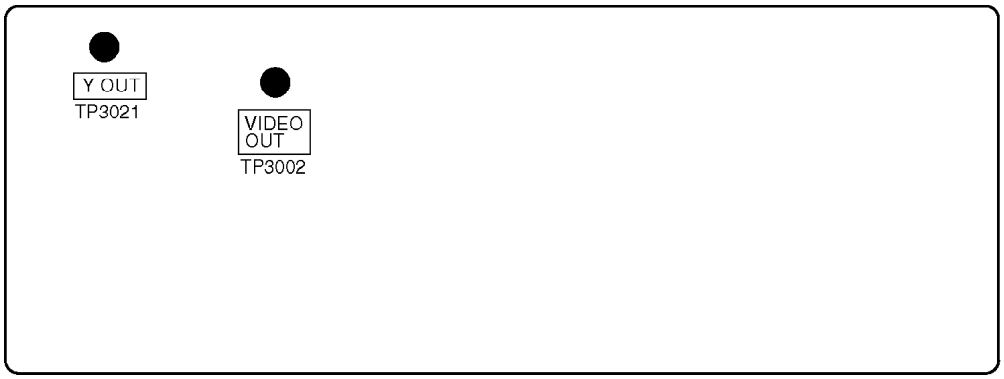
Fig. E8

3.3.8. LOCATION OF TEST POINTS& CONTROLS

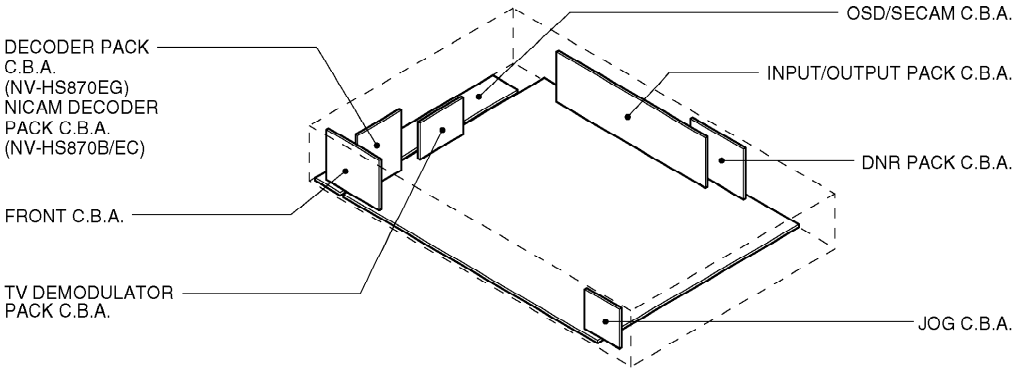
MAIN C.B.A.



INPUT/OUTPUT PACK C.B.A.



3.3.9. CIRCUIT BOARD LAYOUT



4. ABBREVIATIONS

5. INPUT/OUTPUT CHART

5.1. INPUT/OUTPUT CHART FOR IC6001

Fig. MP1

Fig. MP2

Fig. MP3

5.2. TRUTH TABLE (NV-HS870EG/EC)

5.3. TRUTH TABLE (NV-HS870B)

6. WAVEFORM TABLE& VOLTAGE CHART

6.1. WAVEFORM TABLE

6.2. VOLTAGE CHART

7. BLOCK DIAGRAMS

7.1. SYSTEM CONTROL& SERVO BLOCK DIAGRAM

7.2. LUMINANCE& CHROMINANCE BLOCK DIAGRAM

7.3. AUDIO BLOCK DIAGRAM

8. SCHEMATIC DIAGRAMS

8.1. POWER TRANSFORMER SECTION IN MAIN SCHEMATIC DIAGRAM

8.2. POWER SUPPLY/ RF SECTION IN MAIN SCHEMATIC DIAGRAM

8.3. TIMER SECTION IN MAIN SCHEMATIC DIAGRAM

8.4. SYSTEM CONTROL& SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

8.5. LUMINANCE& CHROMINANCE/ AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

8.6. Hi-Fi AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

8.7. INPUT/ OUTPUT PACK SCHEMATIC DIAGRAM

8.8. DNR PACK SCHEMATIC DIAGRAM

8.9. OSD/SECAM SCHEMATIC DIAGRAM

8.10. FRONT SCHEMATIC DIAGRAM

8.11. JOG SCHEMATIC DIAGRAM

8.12. TV DEMODULATOR PACK SCHEMATIC DIAGRAM

8.13. DECODER PACK SCHEMATIC DIAGRAM (NV-HS870EG)

8.14. NICAM DECODER PACK SCHEMATIC DIAGRAM (NV-HS870B/EC)

8.15. CYLINDER STATOR UNIT SCHEMATIC DIAGRAM

8.16. CAPSTAN UNIT SCHEMATIC DIAGRAM

9. CIRCUIT BOARD ASSEMBLIES

9.1. DNR PACK C.B.A.

9.2. MAIN C.B.A.

9.3. CYLINDER STATOR UNIT

9.4. FRONT C.B.A.

9.5. INPUT/OUTPUT PACK C.B.A.

9.6. OSD/SECAM C.B.A.

9.7. TV DEMODULATOR PACK C.B.A.

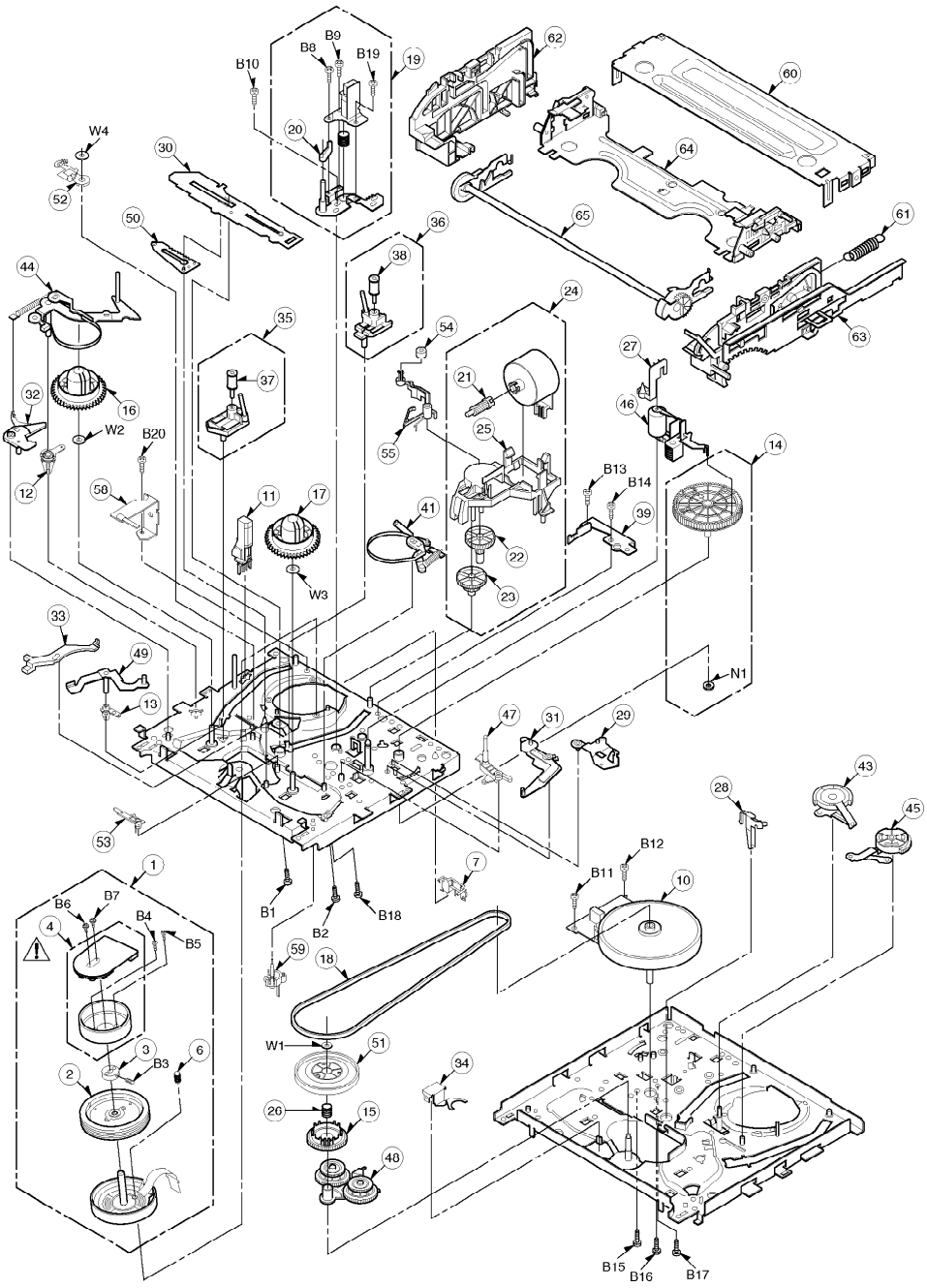
9.8. DECODER PACK C.B.A. (NV-HS870EG)

9.9. NICAM DECODER PACK C.B.A. (NV-HS870B/EC)

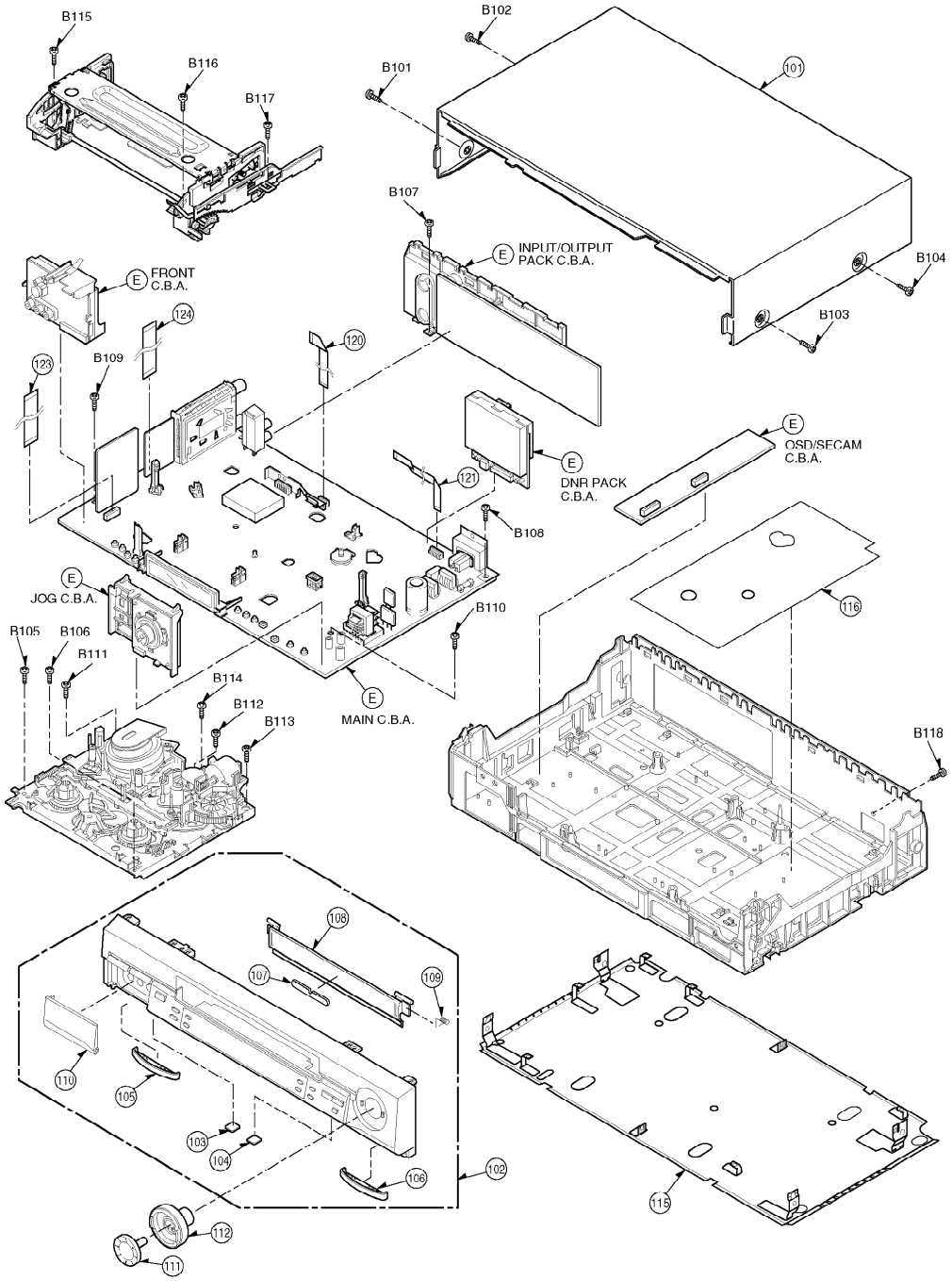
9.10. JOG C.B.A.

10. EXPLODED VIEWS

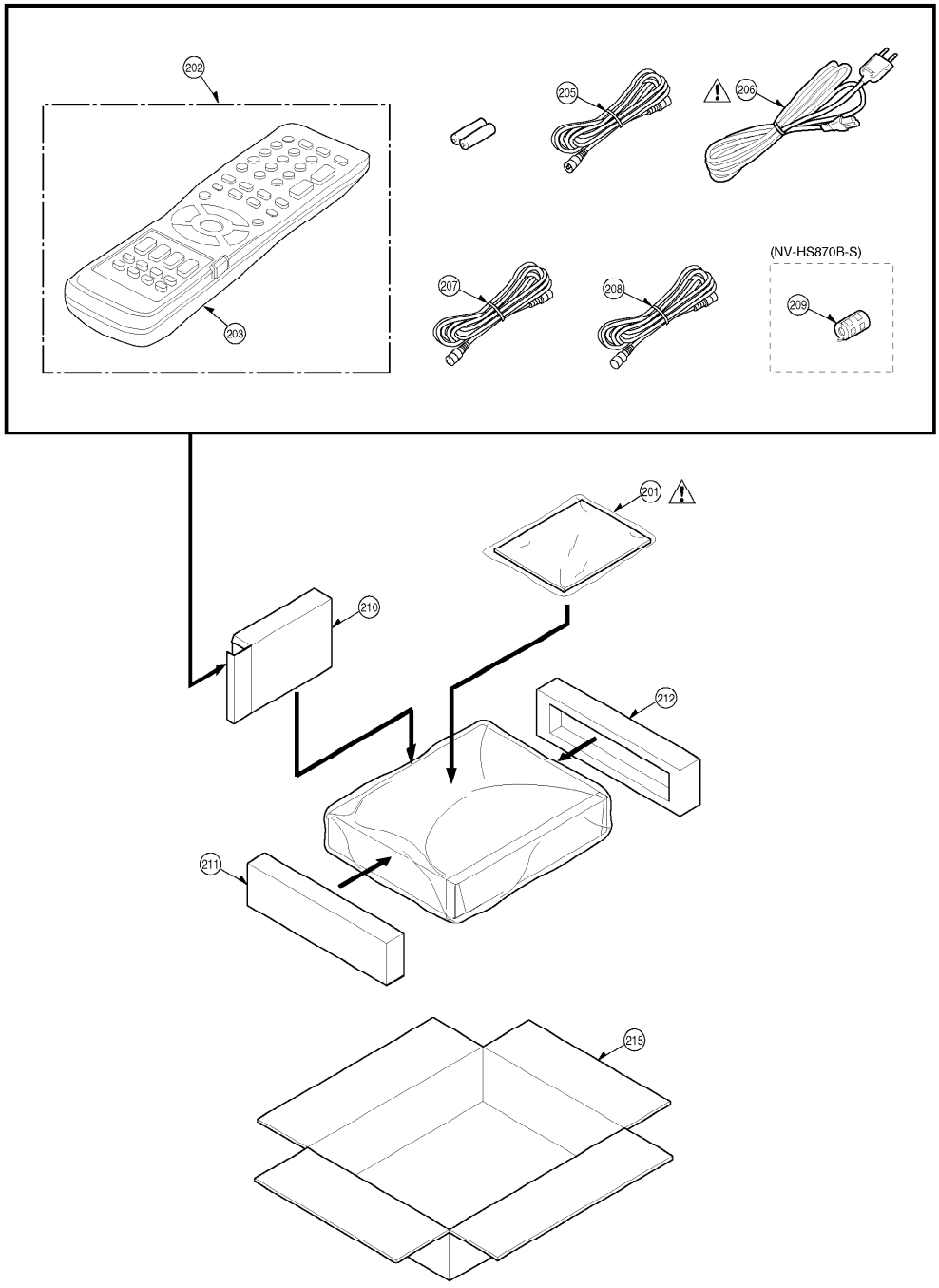
10.1. CHASSIS PARTS SECTION



10.2. CASING PARTS SECTION



10.3. PACKING PARTS SECTION



11. REPLACEMENT PARTS LIST

11.1. CHASSIS PARTS SECTION PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
1	VEG1574	CYLINDER UNIT	[SUPPLIED FROM MBV]
2	VXP2113	UPPER CYLINDER UNIT	[SUPPLIED FROM MBV]
3	VDB1256	CYLINDER RETAINER	
4	VEM0715	CYLINDER MOTOR UNIT	⚠
6	VXS0135	EARTH BRUSH	
7	VMD3795	FLAT CABLE HOLDER	
10	VEK9069	CAPSTAN UNIT	
11	L1AZ00000004	FE HEAD	
12	VDB1431	TENSION ARM BOSS	
13	VDB1460	SUPPLY BRAKE ARM BOSS	
14	VDG1220KIT	MAIN CAM GEAR	
15	VDG1221	CONVERSION GEAR	
16	VDR0350	REEL TABLE	
17	VDR0350	REEL TABLE	
18	VDV0382	CAPSTAN BELT	
19	VED0412	A/C HEAD UNIT	
20	VMX2656	P4 CAP	
21	VDG1217	WORM GEAR	
22	VDG1218	WORM WHEEL GEAR	
23	VDG1219	CENTRE GEAR	
24	VEM0604	LOADING MOTOR UNIT	
25	VMD2619	MOTOR BRACKET	
26	VMB3045	CONVERSION GEAR SPRING	
27	VMD2620	OPENER PIECE	
28	VMD2738	LED PRISM	
29	VML3165	DRIVE RACK ARM	
30	VML3166	MAIN LEVER	
31	VML3167	DRIVE MAIN LEVER ARM	
32	VML3172	SUPPLY SPRING ARM	
33	VML3176	CONVERSION LEVER A	
34	VML3177	CONVERSION LEVER B	
35	VXA6226	INCLINED BASE (S) UNIT	
36	VXA5854	INCLINED BASE (T) UNIT	
37	VXP1895	ROLLER POST	
38	VXP1891	ROLLER POST	
39	VMA9672	SUPPORT ANGLE	
41	VXL2667	TAKE UP BRAKE ARM UNIT	
43	VXL2670	TAKE UP LOADING ARM UNIT	
44	VXL2793	TENSION ARM UNIT	
45	VXL2672	SUPPLY LOADING ARM UNIT	
46	VXL2785	PINCH ARM UNIT	
47	VXL2996	P5 ARM UNIT	
48	VXL2792	IDLER ARM UNIT	
49	VXL2733	SUPPLY BRAKE ARM UNIT	
50	VXL2747	LOADING RACK UNIT	
51	VXP2053	CENTRE CLUTCH UNIT	
52	VXL2783	REV ARM UNIT	
53	VML3276	IDLER POSITIONING ARM	
54	VDP1668-K	CLEANER ROLLER	
55	VML3164	CLEANER ARM	
58	VXS0244	EARTH PLATE	
59	VMD2858	S-VHS SW ACTUATER	
60	VMA9516	TOP PLATE	
61	VMB3047	CONNECTION SPRING	

Ref. No.	Part No.	Part Name & Description	Remarks
62	VMD3379	SIDE PLATE (L)	
63	VXA6540	SIDE PLATE (R) UNIT	
64	VXA5746	CASSETTE HOLDER UNIT	
65	VXP1730	MAIN SHAFT UNIT	
B1	VHD1118	SCREW	
B2	VHD1118	SCREW	
B3	VHD0842	SCREW	
B4	VHD0843	SCREW	
B5	VHD0843	SCREW	
B6	VHD0844	SCREW	
B7	VHD0844	SCREW	
B8	VHD1066	SCREW	
B9	VHD1066	SCREW	
B10	VHD1044	SCREW	
B11	VHD1060	SCREW	
B12	VHD1071	SCREW	
B13	XTS26+6F	SCREW	
B14	XTN26+6F	SCREW	
B15	XTN26+7J	SCREW	
B16	XTN26+7J	SCREW	
B17	XTN26+7J	SCREW	
B18	VHD1095	SCREW	
B19	VHD1185	SCREW	
B20	XTV26+6FFZJ	SCREW	
N1	VHN0311	PUSH NUT	
W1	VMX2208	WASHER	
W2	VMX3022	WASHER	
W3	VMX3022	WASHER	
W4	VMX2699	WASHER	

11.2. CASING PARTS SECTION PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
101	VGM1733	TOP PANEL	
102	VYP8162	FRONT PANEL UNIT	[SUPPLIED FROM MBV]NV-HS870EG-S
102	VYP8165	FRONT PANEL UNIT	[SUPPLIED FROM MBV]NV-HS870B-S
102	VYP8164	FRONT PANEL UNIT	[SUPPLIED FROM MBV]NV-HS870EC-S
103	RKA0072-K	FOOT	
104	RKA0072-K	FOOT	
105	VKA0191	LEG	
106	VKA0191	LEG	
107	VGB0554	SUPER DRIVE BADGE	[SUPPLIED FROM MBV]
108	VKF3320	BLINDER PANEL	[SUPPLIED FROM MBV]
109	VMB2521	BLINDER SPRING	
110	VKF3353	DOOR	[SUPPLIED FROM MBV]
111	VGU8824	JOG DIAL	[SUPPLIED FROM MBV]
112	VXU1600	SHUTTLE RING	[SUPPLIED FROM MBV]
115	VKU0575	BOTTOM PLATE	[SUPPLIED FROM MBV]
116	VMZ3099	VO SHEET	[SUPPLIED FROM MBV]
120	VWJ1477	FLAT CARD CABLE (6P)	[SUPPLIED FROM MBV]P4002-A/C HEAD
121	VWJ1476	FLAT CARD CABLE (9P)	[SUPPLIED FROM MBV]P2502-P2901
123	VWJ16AW170MM	FLAT CARD CABLE (16P)	[SUPPLIED FROM MBV]P6001-P7701
124	VWJ12AW120MM	FLAT CARD CABLE (12P)	[SUPPLIED FROM MBV]P6004-P7702
B101	XTW3+10TFC	SCREW	
B102	XTW3+10TFC	SCREW	
B103	XTW3+10TFC	SCREW	
B104	XTW3+10TFC	SCREW	
B105	VHD0168	SCREW	
B106	VHD0168	SCREW	
B107	VHD1092	SCREW	
B108	VHD1092	SCREW	
B109	VHD1092	SCREW	
B110	VHD1092	SCREW	
B111	VHD1092	SCREW	
B112	VHD1092	SCREW	
B113	VHD1092	SCREW	
B114	XTN26+6JR	SCREW	
B115	XTV26+8FR	SCREW	
B116	XTV26+8FR	SCREW	
B117	XTV26+8FR	SCREW	
B118	XTV3+6JFZ	SCREW	

11.3. PACKING PARTS SECTION PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
201	VQT9212	OPERATING INSTRUCTIONS (ENGLISH/ GERMAN)	⚠[SUPPLIED FROM MBV]NV-HS870EG-S/EC-S
201	VQT9213	OPERATING INSTRUCTIONS (FRENCH/ DUTCH)	⚠[SUPPLIED FROM MBV]NV-HS870EG-S/EC-S
201	VQT9214	OPERATING INSTRUCTIONS (ITALIAN/ GREEK)	⚠[SUPPLIED FROM MBV]NV-HS870EG-S
201	VQT9218	OPERATING INSTRUCTIONS (ENGLISH)	⚠[SUPPLIED FROM MBV]NV-HS870B-S
201	VQT9215	OPERATING INSTRUCTIONS (SPANISH/ SWEDISH)	⚠[SUPPLIED FROM MBV]NV-HS870EC-S
201	VQT9216	OPERATING INSTRUCTIONS (DANISH/ FINNISH)	⚠[SUPPLIED FROM MBV]NV-HS870EC-S
201	VQT9217	OPERATING INSTRUCTIONS (PORTUGUESE)	⚠[SUPPLIED FROM MBV]NV-HS870EC-S
202	N2QAKB000015	REMOTE CONTROLLER	[SUPPLIED FROM MBV]
203	R0186-720010	BATTERY COVER	[SUPPLIED FROM MBV]
205	VJA0963	DIN RF CABLE	K2KF2BA00001
206	VJA1059	AC CORD	⚠NV-HS870EG-S/EC-SK2CQ2DA00001
206	RJA0044-3C	AC CORD	⚠[SUPPLIED FROM MBV]NV-HS870B-S
207	VJA1120	S-VIDEO CABLE	K2KZ9BA00001
208	VJA0787-S	EDIT CABLE	K1EA05BA0001
209	VLF1321	FERRITE CORE	⚠NV-HS870B-SJ0KG00000037
210	VPK2246	ACCESSORIES PACKING	[SUPPLIED FROM MBV]
211	VPN5555	CUSHION (L)	[SUPPLIED FROM MBV]
212	VPN5554	CUSHION (R)	[SUPPLIED FROM MBV]
215	VPG0J93	PACKING	[SUPPLIED FROM MBV]
		SERVICE FIXTURES & TOOLS	
	VFJ8125H3F	VHS ALIGNMENT TAPE (PAL)	
	VFK0335	RETAINING RING REMOVER (3mm/ 4mm)	
	VFK0329	POST ADJUSTMENT SCREWDRIVER	
	VFK0326	HEX WRENCH SET	
	VFK0132	BACK TENSION METER	
	VFK27	HEAD CLEANING STICK	
	VFK1024	MOLYTONE GREASE	
	VFK0330	FINE ADJUSTMENT GEAR DRIVER	
	VFK1301	SILICONE GREASE	

11.4. ELECTRICAL PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE: Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICROFARADS (uf), P=uuF.
4. The P.C. Board units marked width "■" show below the main assembled parts.
5. The marking (RTL) indicaters the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.	Part No.	Part Name & Description	Remarks
■	VEP06E08F	MAIN C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870EG-S
			THE FOLLOWING C.B.A.S ARE INCLUDED IN MAIN C.B.A.
			VEP07A16A, VEP07A23L
■	VEP07A16A	DECODER PACK C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870EG-S
			INCLUDED IN MAIN C.B.A.(VEP06E08F).
■	VEP07A23L	TV DEMODULATOR PACK C.B.A	[SUPPLIED FROM MBV](RTL)NV-HS870EG-S
			INCLUDED IN MAIN C.B.A.(VEP06E08F).
■	VEP06E08G	MAIN C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870B-S
			THE FOLLOWING C.B.A.S ARE INCLUDED IN MAIN C.B.A.
			VEP07A18A, VEP07A23M
■	VEP07A18A	NICAM DECODER PACK C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870B-S
			INCLUDED IN MAIN C.B.A.(VEP06E08G).
■	VEP07A23M	TV DEMODULATOR PACK C.B.A	[SUPPLIED FROM MBV](RTL)NV-HS870B-S
			INCLUDED IN MAIN C.B.A.(VEP06E08G).
■	VEP06E08H	MAIN C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870EC-S
			THE FOLLOWING C.B.A.S ARE INCLUDED IN MAIN C.B.A.
			VEP07A18J, VEP07A23L
■	VEP07A18J	NICAM DECODER PACK C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870EC-S
			INCLUDED IN MAIN C.B.A.(VEP06E08H).
■	VEP07A23L	TV DEMODULATOR PACK C.B.A	[SUPPLIED FROM MBV](RTL)NV-HS870EC-S
			INCLUDED IN MAIN C.B.A.(VEP06E08H).
■	VEP03F76B	DNR C.B.A.	[SUPPLIED FROM MBV](RTL)
■	VEP03F87C	INPUT/OUTPUT PACK C.B.A.	[SUPPLIED FROM MBV](RTL)
■	VEP04782A	FRONT C.B.A.	[SUPPLIED FROM MBV](RTL)
■	VEP06E13A	JOG C.B.A.	[SUPPLIED FROM MBV](RTL)
■	VEP07A38B	OSD/SECAM C.B.A.	[SUPPLIED FROM MBV](RTL)

Ref. No.	Part No.	Part Name & Description	Remarks
■	----------	CYLINDER STATOR C.B.A.	INCLUDED IN CYLINDER MOTOR UNIT (VEM0715).
■	----------	CAPSTAN DRIVE C.B.A.	INCLUDED IN CAPSTAN UNIT (VEK9069).
■	VEP06E08F	MAIN C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870EG-S
■	VEP06E08G	MAIN C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870B-S
■	VEP06E08H	MAIN C.B.A.	[SUPPLIED FROM MBV](RTL)NV-HS870EC-S
C0701	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C0702	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C0703	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A1050002
C0704	ECUM1E333KBX	C.CAPACITOR CH 25V 0.033U	[SUPPLIED FROM MBV]
C0707	ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	
C0708	ECEA1HKAR47	E.CAPACITOR 50V 0.47U	
C0710	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C0711	ECEA1CKA220	E.CAPACITOR 16V 22U	
C0712	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C0713	ECEA0JKA331	E.CAPACITOR 6.3V 330U	
C0714	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C0715	ECUX1H030CCV	C.CAPACITOR CH 50V 3P	NV-HS870EG-S/EC-S ECJ1XC1H030C
C0715	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	NV-HS870B-S
C0717	ECUM1H330GUV	C.CAPACITOR CH 50V 33P	
C0719	ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	F1H1E104A026
C0721	ECUX1H121JCV	C.CAPACITOR CH 50V 120P	NV-HS870EG-S/EC-S ECJ1XC1H121J
C0721	ECUX1H820JCV	C.CAPACITOR CH 50V 82P	NV-HS870B-S
C0724	ECUX1H221KBV	C.CAPACITOR CH 50V 220P	NV-HS870EG-S/EC-S ECJ1XB1H221K
C0724	ECUX1H331KBV	C.CAPACITOR CH 50V 330P	NV-HS870B-S
C1001	ECA1EHJ470	E.CAPACITOR 25V 47U	[SUPPLIED FROM MBV]
C1002	EEUEB1H220SB	E.CAPACITOR 50V 22U	[SUPPLIED FROM MBV]
C1003	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C1004	VCEA1CBS470	E.CAPACITOR 16V 47U	F2A1C470A006
C1005	ECA1HHJ100	E.CAPACITOR 50V 10U	[SUPPLIED FROM MBV]
C1006	ECEA1HKA4R7	E.CAPACITOR 50V 4.7U	
C1007	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C1008	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C1009	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C1010	EEUEB1H100SB	E.CAPACITOR 50V 10U	[SUPPLIED FROM MBV]
C1011	EEUEB1E470SB	E.CAPACITOR 25V 47U	[SUPPLIED FROM MBV]
C1012	EEUEB1H100SB	E.CAPACITOR 50V 10U	[SUPPLIED FROM MBV]
C1013	ECA1CHJ101	E.CAPACITOR 16V 100U	[SUPPLIED FROM MBV]
C1014	ECA1CHJ101	E.CAPACITOR 16V 100U	[SUPPLIED FROM MBV]
C1016	ECA1EHJ470	E.CAPACITOR 25V 47U	[SUPPLIED FROM MBV]
C1018	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C1019	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C1020	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C1021	ECEA1CKA220	E.CAPACITOR 16V 22U	
C1022	ECEA1CKA101	E.CAPACITOR 16V 100U	

Ref. No.	Part No.	Part Name & Description	Remarks
C1023	ECA1CHJ101	E.CAPACITOR 16V 100U	[SUPPLIED FROM MBV]
C1024	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C1025	ECUM1H104KBN	C.CAPACITOR CH 50V 0.1U	
C1026	ECUM1H104KBN	C.CAPACITOR CH 50V 0.1U	
C1101	VCF2AAF683M	X2 CAPACITORS	⚠[SUPPLIED FROM MBV]
C1102	VCK0286E102	CERAMIC CAPACITOR	⚠F1BAF1020011
C1105	ECEC2GG680F	E.CAPACITOR 400V 68U	[SUPPLIED FROM MBV]
C1107	F1A3A271A028	E.CAPACITOR 1KV 270U	[SUPPLIED FROM MBV]F1A3A271A034
C1108	ECQB1H223JF	P.CAPACITOR 50V 0.022U	
C1109	ECQB1H473JF	P.CAPACITOR 50V 0.047U	
C1110	ECQV1H104JL	P.CAPACITOR 50V 0.1U	
C1111	ECQB1H103JF	P.CAPACITOR 50V 0.01U	
C1112	VCK0286E102	CERAMIC CAPACITOR	⚠F1BAF1020011
C1201	F1B3A332A004	E.CAPACITOR 1KV 3300U	[SUPPLIED FROM MBV]
C1202	VCEA1HJB560B	E.CAPACITOR 50V 56U	[SUPPLIED FROM MBV]F2A1H560A101
C1203	VCEA1EJH821	E.CAPACITOR 25V 820U	F2A1E8210001
C1204	VCEA1AJH122	E.CAPACITOR 10V 1200U	
C1205	VCEA1HJB560B	E.CAPACITOR 50V 56U	[SUPPLIED FROM MBV]F2A1H560A101
C1206	VCEA1AJB101B	E.CAPACITOR 10V 100U	[SUPPLIED FROM MBV]F2A1A101A089
C1207	ECQV1H104JL	P.CAPACITOR 50V 0.1U	
C1208	ECA1AHJ331	E.CAPACITOR 10V 330U	[SUPPLIED FROM MBV]
C1209	ECA1EM101	E.CAPACITOR 25V 100U	
C1210	VCEA1AJH122	E.CAPACITOR 10V 1200U	
C1211	ECA1AHJ331	E.CAPACITOR 10V 330U	[SUPPLIED FROM MBV]
C1501	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C2502	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C2503	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C2505	ECUM1C563KBV	C.CAPACITOR CH 16V 0.056U	
C2506	ECUM1C563KBV	C.CAPACITOR CH 16V 0.056U	
C2507	ECUM1C563KBV	C.CAPACITOR CH 16V 0.056U	
C2508	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C2509	ECUM1C474ZFV	C.CAPACITOR CH 16V 0.47U	[SUPPLIED FROM MBV]
C2510	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	ECJ1XC1H330J
C2511	ECEA0JKN220	E.CAPACITOR 6.3V 22U	
C2512	ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	
C2513	ECUX1H392KBV	C.CAPACITOR CH 50V 3900P	
C2514	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C2515	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C2516	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C2518	ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	ECJ2VF1E104Z
C2519	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E223A024
C2520	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E223A024
C2521	ECUM1C224KBX	C.CAPACITOR CH 16V 0.22U	[SUPPLIED FROM MBV]
C2522	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C2523	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C2524	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C2525	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C2526	ECA0JHJ221	E.CAPACITOR 6.3V 220U	[SUPPLIED FROM MBV]
C3001	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3002	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	
C3003	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C3005	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	
C3006	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K

Ref. No.	Part No.	Part Name & Description	Remarks
C3008	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3009	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3010	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3011	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C3012	ECUM1C224KBX	C.CAPACITOR CH 16V 0.22U	[SUPPLIED FROM MBV]
C3013	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3014	ECUM1A335KBN	C.CAPACITOR CH 10V 3.3U	
C3015	ECEA1HKA010	E.CAPACITOR 50V 1U	
C3016	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3017	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3018	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3019	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C3020	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3021	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
C3025	ECUM1A335KBN	C.CAPACITOR CH 10V 3.3U	
C3026	ECUX1H050CCV	C.CAPACITOR CH 50V 5P	ECJ1XC1H050C
C3027	ECUX1H223ZFV	C.CAPACITOR CH 50V 0.022U	
C3028	ECUM1C474KBN	C.CAPACITOR CH 16V 0.47U	
C3029	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C3030	ECUM1C224KBX	C.CAPACITOR CH 16V 0.22U	[SUPPLIED FROM MBV]
C3031	ECUM1A225KBN	C.CAPACITOR CH 10V 2.2U	
C3032	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E223A024
C3033	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3034	ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	
C3035	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3036	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3037	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3038	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3039	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C3040	ECEA1CKN100	E.CAPACITOR 16V 10U	
C3041	ECEA1CKN100	E.CAPACITOR 16V 10U	
C3043	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3044	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3047	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3048	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3049	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A1050002
C3050	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C3051	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3053	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3055	ECUX1H220JCV	C.CAPACITOR CH 50V 22P	ECJ1XC1H220J
C3057	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
C3058	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	
C3059	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3060	ECUX1A105ZFV	C.CAPACITOR CH 10V 1U	
C3062	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3068	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3069	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3501	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3502	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3503	ECUX1H221GCV	C.CAPACITOR CH 50V 220P	[SUPPLIED FROM MBV]
C3504	ECUM1H271GCN	C.CAPACITOR CH 50V 270P	
C3505	ECUM1H271GCN	C.CAPACITOR CH 50V 270P	
C3506	ECUM1H820GCN	C.CAPACITOR CH 50V 82P	
C3507	ECEA0JKA470	E.CAPACITOR 6.3V 47U	

Ref. No.	Part No.	Part Name & Description	Remarks
C3508	ECUM1H271GCN	C.CAPACITOR CH 50V 270P	
C3509	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3511	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3512	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3514	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3515	ECEA1HKN4R7	E.CAPACITOR 50V 4.7U	
C3516	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C3517	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C3991	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3992	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3993	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C3994	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C4001	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4002	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C4003	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C4004	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4005	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C4006	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C4007	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C4008	ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	
C4009	ECEA0JKA220	E.CAPACITOR 6.3V 22U	
C4010	ECEA1EKS3R3	E.CAPACITOR 25V 3.3U	
C4012	ECUX1H122KBV	C.CAPACITOR CH 50V 1200P	
C4013	ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	
C4014	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	
C4015	ECEA0JKS220	E.CAPACITOR 6.3V 22U	
C4016	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C4017	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C4018	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	ECJ1XC1H221J
C4019	ECQV1H154JL	P.CAPACITOR 50V 0.15U	[SUPPLIED FROM MBV]
C4020	ECEA1AKA470	E.CAPACITOR 10V 47U	
C4021	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	
C4022	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E223A024
C4023	ECEA1AKA220	E.CAPACITOR 10V 22U	
C4024	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4025	ECEA1AKA220	E.CAPACITOR 10V 22U	
C4026	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E223A024
C4027	ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	ECJ1XB1H222K
C4028	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C4029	ECQB1H223JF	P.CAPACITOR 50V 0.022U	
C4501	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4502	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4503	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4504	ECQB1H473JF	P.CAPACITOR 50V 0.047U	
C4505	ECEA1AKA330	E.CAPACITOR 10V 33U	
C4506	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4507	ECEA1CKA220	E.CAPACITOR 16V 22U	
C4508	ECQB1H153JF	P.CAPACITOR 50V 0.015U	
C4509	ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	
C4510	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	
C4511	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C4514	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C4515	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C4516	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K

Ref. No.	Part No.	Part Name & Description	Remarks
C4517	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C4518	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C4519	ECUM1C224KBX	C.CAPACITOR CH 16V 0.22U	[SUPPLIED FROM MBV]
C4520	ECQB1H153JF	P.CAPACITOR 50V 0.015U	
C4521	ECEA0JKS220	E.CAPACITOR 6.3V 22U	
C4522	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4523	ECEA1AKS330	E.CAPACITOR 10V 33U	
C4524	ECQB1H473JF	P.CAPACITOR 50V 0.047U	
C4525	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C4526	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C4529	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4530	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4531	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4532	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4533	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4534	ECEA1CKA470	E.CAPACITOR 16V 47U	
C4535	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4536	ECEA1CKA220	E.CAPACITOR 16V 22U	
C4537	ECEA1CKA100	E.CAPACITOR 16V 10U	
C4538	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C4539	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C4540	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C4541	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C4544	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C4545	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C5002	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C5003	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C5004	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C5005	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5006	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5007	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5008	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5009	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5010	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C6001	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C6003	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C6004	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C6005	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C6006	ECUX1H121JCV	C.CAPACITOR CH 50V 120P	ECJ1XC1H121J
C6007	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	ECJ1XC1H151J
C6008	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C6009	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	
C6010	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	
C6011	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	
C6012	ECUX1H150JCV	C.CAPACITOR CH 50V 15P	ECJ1XC1H150J
C6013	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C6014	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C6015	ECEA1CKA100	E.CAPACITOR 16V 10U	
C6016	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C6017	ECUX1H681JCV	C.CAPACITOR CH 50V 680P	
C6018	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E223A024
C6019	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C6020	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C6022	ECUM1H221JCN	C.CAPACITOR CH 50V 220P	

Ref. No.	Part No.	Part Name & Description	Remarks
C6023	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C6024	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C6025	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C6026	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C6033	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	ECJ1XC1H221J
C6034	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	ECJ1XC1H221J
C6035	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A1050002
C6036	ECUX1H561JCV	C.CAPACITOR CH 50V 560P	ECJ1XC1H561J
C6037	ECUM1H221JCN	C.CAPACITOR CH 50V 220P	
C6040	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C6041	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C7301	ECUM1H103KBG	C.CAPACITOR CH 50V 0.01U	NV-HS870EG-S[SUPPLIED FROM MBV]
C7301	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	NV-HS870EC-S ECJ1XF1H103Z
C7302	ECEA1HKNR47	E.CAPACITOR 50V 0.47U	NV-HS870EG-S
C7302	VCEA0JAW101	E.CAPACITOR 6.3V 100U	NV-HS870B-S/EC-S
C7303	ECEA1HKNR47	E.CAPACITOR 50V 0.47U	NV-HS870EG-S
C7303	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	NV-HS870B-S ECJ1XF1H103Z
C7304	ECUM1H681JCX	C.CAPACITOR CH 50V 680P	NV-HS870EG-S[SUPPLIED FROM MBV]
C7304	VCEA0JAW101	E.CAPACITOR 6.3V 100U	NV-HS870B-S/EC-S
C7305	ECUM1H123KBN	C.CAPACITOR CH 50V 0.012U	NV-HS870EG-S
C7305	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	NV-HS870B-S/EC-S ECJ1XC1H330J
C7306	ECUM1H123KBN	C.CAPACITOR CH 50V 0.012U	NV-HS870EG-S
C7306	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	NV-HS870B-S/EC-S ECJ1XC1H330J
C7307	ECUM1H681JCX	C.CAPACITOR CH 50V 680P	NV-HS870EG-S[SUPPLIED FROM MBV]
C7307	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	NV-HS870B-S/EC-S ECJ1XF1H103Z
C7308	ECEA1HKNR47	E.CAPACITOR 50V 0.47U	NV-HS870EG-S
C7308	ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	NV-HS870B-S/EC-S
C7309	ECUM1H103KBG	C.CAPACITOR CH 50V 0.01U	NV-HS870EG-S[SUPPLIED FROM MBV]
C7310	ECUM1H103KBG	C.CAPACITOR CH 50V 0.01U	NV-HS870EG-S[SUPPLIED FROM MBV]
C7311	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	NV-HS870B-S/EC-S
C7312	ECEA1CKA100	E.CAPACITOR 16V 10U	NV-HS870EG-S
C7312	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	NV-HS870B-S/EC-S
C7313	ECEA1CKA100	E.CAPACITOR 16V 10U	NV-HS870EG-S
C7313	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	NV-HS870B-S/EC-S
C7315	ECUM1E104KBX	C.CAPACITOR CH 25V 0.1U	NV-HS870B-S/EC-S[SUPPLIED FROM MBV]
C7316	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	NV-HS870EG-S
C7316	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	NV-HS870B-S/EC-S
C7317	ECEA0JKA101	E.CAPACITOR 6.3V 100U	NV-HS870EG-S
C7317	VCEA1CAW100	E.CAPACITOR 16V 10U	NV-HS870B-S/EC-S F2A1C1000015
C7318	ECEA1CKA100	E.CAPACITOR 16V 10U	NV-HS870EG-S
C7318	VCEA0JAW470	E.CAPACITOR 6.3V 47U	NV-HS870B-S/EC-S F2A0J4700008
C7319	ECEA1CKA470	E.CAPACITOR 16V 47U	NV-HS870EG-S
C7319	VCEA1CAW100	E.CAPACITOR 16V 10U	NV-HS870B-S/EC-S F2A1C1000015
C7320	ECUM1H472KBG	C.CAPACITOR CH 50V 4700P	NV-HS870EG-S[SUPPLIED FROM MBV]
C7320	VCEA1CAW100	E.CAPACITOR 16V 10U	NV-HS870B-S/EC-S F2A1C1000015
C7321	ECEA1HKAR47	E.CAPACITOR 50V 0.47U	NV-HS870EG-S
C7322	ECEA1HKNR47	E.CAPACITOR 50V 0.47U	NV-HS870EG-S
C7323	ECUM1H104KBN	C.CAPACITOR CH 50V 0.1U	NV-HS870EG-S
C7324	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	NV-HS870B-S/EC-S
C7325	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	NV-HS870B-S/EC-S
C7326	ECUM1H152KBM	C.CAPACITOR CH 50V 1500P	NV-HS870EG-S
C7327	ECUM1H152KBM	C.CAPACITOR CH 50V 1500P	NV-HS870EG-S
C7328	ECUM1H152KBM	C.CAPACITOR CH 50V 1500P	NV-HS870EG-S

Ref. No.	Part No.	Part Name & Description	Remarks
C7341	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	NV-HS870B-S/EC-S
C7342	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	NV-HS870B-S/EC-S
C7501	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C7502	ECEA1HKA100	E.CAPACITOR 50V 10U	
C7503	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C7504	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C7507	VCE0073	SUPER CAPACITOR	
C7508	ECEA0JKA221	E.CAPACITOR 6.3V 220U	
C7509	ECUX1C683ZFV	C.CAPACITOR CH 16V 0.068U	
C7510	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C7511	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C7601	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C7602	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C7603	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	ECJ1XC1H221J
C7604	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C7605	ECEA1HKA100	E.CAPACITOR 50V 10U	
C7606	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	
C7608	ECJ1ZF1C104Z	C.CAPACITOR CH 0.1U	[SUPPLIED FROM MBV]
C7609	ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	ECJ1XB1H222K
C7610	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	ECJ1XC1H330J
C7611	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	ECJ1XC1H330J
C7612	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C7613	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C7614	ECUX1H100DCV	C.CAPACITOR CH 50V 10P	
C7617	ECEA1HKN4R7	E.CAPACITOR 50V 4.7U	
C7619	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C7620	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
D0702	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
D1001	MA165	DIODE	MA2C165
D1002	MA4051N-H	DIODE	[SUPPLIED FROM MBV]
D1003	MA4051N-L	DIODE	
D1005	MA4051N-M	DIODE	MAZ4051NM
D1006	MA165	DIODE	MA2C165
D1007	MA4130N-L	DIODE	MAZ4130NL
D1103	DF08S-6622	DIODE	[SUPPLIED FROM MBV]B0KB00000013
D1104	MA4027-L	DIODE	[SUPPLIED FROM MBV]MAZ40270L
D1105	MA165	DIODE	MA2C165
D1106	MA185	DIODE	MA2C185
D1107	MAZ751000C	DIODE	[SUPPLIED FROM MBV]
D1108	B0EAKL000031	DIODE	
D1201	MA185	DIODE	MA2C185
D1202	11EQS10	DIODE	
D1203	11EQS10	DIODE	
D1206	11EQS04	DIODE	⚠B0JAME000020
D1207	11EQS04	DIODE	⚠B0JAME000020
D1208	MA185	DIODE	MA2C185
D1209	MA185	DIODE	MA2C185
D1211	11EQS04	DIODE	⚠B0JAME000020
D1212	11EQS04	DIODE	⚠B0JAME000020
D1501	SIR505S	DIODE	B3EA00000040
D2501	MA165	DIODE	MA2C165
D2502	MA165	DIODE	MA2C165

Ref. No.	Part No.	Part Name & Description	Remarks
D3001	1SS355	DIODE	B0ACCK000005
D3002	AU01Z	DIODE	B0HAGM000006
D4001	MA165	DIODE	MA2C165
D4502	MA165	DIODE	MA2C165
D6003	1SS355	DIODE	B0ACCK000005
D6004	1SS355	DIODE	B0ACCK000005
D7501	MA4220N-M	DIODE	[SUPPLIED FROM MBV]
D7503	RB441P	DIODE	
D7601	MA4300M	DIODE	MAZ43000M
D7602	MA165	DIODE	MA2C165
D7603	MA165	DIODE	MA2C165
DP7501	A2BD00000040	DISPLAY TUBE	[SUPPLIED FROM MBV]
F1101	VSF0243C16	FUSE	⚠K5D162BL0004
FL7301	VLF0633	FILTER	NV-HS870B-S/EC-S J0HACK000008
IC0701	LA75503	IC	C1AA00000606
IC1001	UPC1093J	IC	C0DAEMC00002
IC1201	UPC1093J	IC	C0DAEMC00002
IC1501	RPI354N	IC	B3EZ00000001
IC1502	RPI354N	IC	B3EZ00000001
IC2501	BD6653FV	IC	[SUPPLIED FROM MBV]C1AB00001332
IC3001	C1AB00001299	IC	[SUPPLIED FROM MBV]
IC3002	C1AB00001340	IC	[SUPPLIED FROM MBV]C1AB00001341
IC3501	AN3293S	IC	
IC3502	AN6308S	IC	
IC3503	AN6308S	IC	
IC3991	C1AB00001340	IC	[SUPPLIED FROM MBV]C1AB00001341
IC4501	AN3656NFBPBV	IC	[SUPPLIED FROM MBV]
IC6001	C2CBJG000168	IC	[SUPPLIED FROM MBV]
IC6002	C3EAJC000015	IC	[SUPPLIED FROM MBV]
IC7301	C0ZBZ0000580	IC	NV-HS870EG-S[SUPPLIED FROM MBV]
IC7301	TDA9874AH	IC	NV-HS870B-S/EC-S C1AB00001404
IC7302	PST7043	IC	NV-HS870B-S/EC-S C0EAH0000051
IC7501	M35502AFP	IC	
IC7502	PNA4611M08VT	PHOTO DIODE	
IC7503	RN5VD28AA	IC	C0EBE0000036
IC7504	S80743AL	IC	C0EAH0000066
IP1001	UNH000300A	IC PROTECTOR	⚠
IP1002	UNH001300A	IC PROTECTOR	⚠[SUPPLIED FROM MBV]
IP1003	UNH000300A	IC PROTECTOR	⚠
IP1004	UNH000300A	IC PROTECTOR	⚠
IP1005	UNH000300A	IC PROTECTOR	⚠
IP1006	UNH000300A	IC PROTECTOR	⚠
IP1201	VSF0015A04	IC PROTECTOR	⚠
K0703	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K0707	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K0709	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K1212	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
K1213	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K3001	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K3003	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K3005	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K3006	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K3012	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	
K4003	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K5001	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7301	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7302	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870B-S/EC-S
K7303	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870B-S/EC-S
K7608	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7609	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7610	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7611	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7612	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7613	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
K7614	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
L0701	ELJNAR18JF	CHIP INDUCTOR	NV-HS870EG-S/EC-S
L0701	ELJNAR22JF	CHIP INDUCTOR	NV-HS870B-S
L0703	ELJNA2R2JF	INDUCTOR 2.2UH	NV-HS870EG-S/EC-S
L0703	ELJNA1R8JF	CHIP INDUCTOR	NV-HS870B-S
L1101	ELF15N003A	LINE FILTER	⚠
L1102	ELF15N003A	LINE FILTER	⚠
L1103	G0A220G00018	COIL	[SUPPLIED FROM MBV]G0A220G00019
L1201	VLQ0655K220	COIL 22UH	
L1202	G0A220G00018	COIL	[SUPPLIED FROM MBV]G0A220G00019
L2501	VLQ0599J680	COIL 68UH	G0C680JA0026
L3002	VLQ0599J820	COIL 82UH	G0C820JA0026
L3003	VLQ0599J150	COIL 15UH	G0C150JA0026
L3006	VLQ0163J120	COIL 12UH	G1C120J00001
L3007	VLQ0599J390	COIL 39UH	G0C390JA0026
L3008	VLQ0599J560	COIL 56UH	G0C560JA0026
L3010	VLQ0599J560	COIL 56UH	G0C560JA0026
L3012	VLQ0599J4R7	COIL 4.7UH	G0C4R7JA0026
L3013	VLQ0599J181	COIL 180UH	G0C181JA0019
L3015	VLQ0599J560	COIL 56UH	G0C560JA0026
L3991	VLQ0599J330	COIL 33UH	G0C330JA0026
L4002	VLQ0599J680	COIL 68UH	G0C680JA0026
L4003	VLQ0599J680	COIL 68UH	G0C680JA0026
L4501	VLQ0599J1R2	COIL 1.2UH	G0C1R2JA0026
L4502	VLQ0599J1R2	COIL 1.2UH	G0C1R2JA0026
L4504	VLQ0599J181	COIL 180UH	G0C181JA0019
L5001	VLQ0599J560	COIL 56UH	G0C560JA0026
L6001	VLQ0599J101	COIL 100UH	G0C101JA0026
L6002	VLQ0599JR56	COIL 0.56UH	
L6003	VLQ0599J221	COIL 220UH	G0C221JA0026
L6005	VLQ0599J680	COIL 68UH	G0C680JA0026
L7302	VLQ0599J1R0	COIL 1UH	NV-HS870B-S/EC-S G0C1R0JA0026
L7601	VLQ0599J330	COIL 33UH	G0C330JA0026
L7602	VLQ0599J330	COIL 33UH	G0C330JA0026
L7603	VLQ0599J330	COIL 33UH	G0C330JA0026
L7604	VLQ0599J2R2	COIL 2.2UH	G0C2R2JA0026

[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Remarks
L7607	VLQ0599J2R2	COIL 2.2UH	G0C2R2JA0026
L7651	VLQ0599J100	COIL 10UH	G0C100JA0026
LB1101	J0JKB0000028	FILTER	[SUPPLIED FROM MBV]J0JKB0000027
LB1103	J0JKB0000028	FILTER	[SUPPLIED FROM MBV]J0JKB0000027
LB1104	J0JKB0000028	FILTER	[SUPPLIED FROM MBV]J0JKB0000027
LB1105	J0JKB0000028	FILTER	[SUPPLIED FROM MBV]J0JKB0000027
LB1210	J0JKB0000028	FILTER	[SUPPLIED FROM MBV]J0JKB0000027
LB4001	J0JBC0000070	FILTER	[SUPPLIED FROM MBV]
LB4002	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB4003	J0JBC0000070	FILTER	[SUPPLIED FROM MBV]
LB4004	J0JBC0000070	FILTER	[SUPPLIED FROM MBV]
LB4005	J0JBC0000070	FILTER	[SUPPLIED FROM MBV]
LB5001	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB5002	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB5003	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB5004	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB5005	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB5006	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB7301	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870B-S/EC-S
LB7303	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870B-S/EC-S
LB7602	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB7603	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LR1101	VLP0392	COIL	
P1101	VJS4283	AC INLET	⚠K2AA2K000011
P1501	VJS3837A002	CONNECTOR (FEMALE) 2P	K1KB02A00035
P2501	VJP3835A012	CONNECTOR (MALE) 12P	
P2502	VJS3537A009G	CONNECTOR (FEMALE) 9P	K1MN09A00012
P4002	VJS3537A006G	CONNECTOR (FEMALE) 6P	K1MN06A00034
P4003	VJS3837A002	CONNECTOR (FEMALE) 2P	K1KB02A00035
P5001	VJS3537A010G	CONNECTOR (FEMALE) 10P	K1MN10A00036
P6001	VJS3537A016G	CONNECTOR (FEMALE) 16P	K1MN16A00035
P6004	VJS3537A012G	CONNECTOR (FEMALE) 12P	K1MN12A00033
PK0701	VJR0826E009W	CONNECTOR (MALE) 9P	K1MR09A00028
PK7301	VJR0777B007W	CONNECTOR (MALE) 7P	K1MM07B00002
PK7302	VJR0777B006W	CONNECTOR (MALE) 6P	K1MM06B00002
PP0701	VJP3589A004B	CONNECTOR (MALE) 4P	
PP3001	VJP3186A018W	CONNECTOR (MAIL) 18P	K1KA18A00046
PP3002	VJP3042G004W	CONNECTOR (MALE) 4P	[SUPPLIED FROM MBV]K1KA04A00176
PP3901	K1KA03A00157	CONNECTOR	[SUPPLIED FROM MBV]
PP3902	VJP3042G014W	CONNECTOR (MALE) 14P	K1KA14A00098
PP3903	VJP3042G006W	CONNECTOR (MALE) 6P	K1KA06A00164
PP3904	VJP3042G016W	CONNECTOR (MALE) 16P	K1KA16A00113
PP3905	VJP3042G014W	CONNECTOR (MALE) 14P	K1KA14A00098
PP3906	VJP3042G014W	CONNECTOR (MALE) 14P	K1KA14A00098
PP6003	VJP3042G007W	CONNECTOR (MALE) 7P	K1KA07A00084
Q0702	2SD601A-S	TRANSISTOR	
Q1001	2SD602A-R	TRANSISTOR	2SD0602AR
Q1002	2SD1996-S	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q1003	2SB710A	TRANSISTOR	2SB0710A
Q1004	2SD601A	TRANSISTOR	2SD0601A
Q1005	2SD1996-S	TRANSISTOR	
Q1006	2SD1996-S	TRANSISTOR	
Q1007	2SD602A-R	TRANSISTOR	2SD0602AR
Q1008	2SD1996-S	TRANSISTOR	
Q1009	2SD1996-S	TRANSISTOR	
Q1010	2SD1996-S	TRANSISTOR	
Q1011	2SD1996-S	TRANSISTOR	
Q1101	2SK2876	TRANSISTOR	[SUPPLIED FROM MBV]
Q1102	B1DEDR000003	TRANSISTOR	[SUPPLIED FROM MBV]
Q1103	2SC3311A-S	TRANSISTOR	2SC3311AS
Q1104	2SD1992A-R	TRANSISTOR	
Q1201	PS2561L2V13W	PHOTO COUPLER	⚠[SUPPLIED FROM MBV]
Q1501	PNB2301MBV	TRANSISTOR	
Q1502	PNB2301MAV	TRANSISTOR	
Q3002	2SB709A	TRANSISTOR	2SB0709A
Q3003	2SD601A	TRANSISTOR	2SD0601A
Q3004	2SD601A	TRANSISTOR	2SD0601A
Q3005	2SB709A	TRANSISTOR	2SB0709A
Q3006	2SD601A	TRANSISTOR	2SD0601A
Q3007	2SD601A	TRANSISTOR	2SD0601A
Q3010	2SD601A	TRANSISTOR	2SD0601A
Q3501	2SB709A	TRANSISTOR	2SB0709A
Q3502	2SB709A	TRANSISTOR	2SB0709A
Q4001	2SB710A	TRANSISTOR	2SB0710A
Q4002	2SD602A-R	TRANSISTOR	2SD0602AR
Q4003	2SD1149	TRANSISTOR	
Q4004	2SD601A	TRANSISTOR	2SD0601A
Q4005	2SB710A-R	TRANSISTOR	
Q4006	2SD602A-R	TRANSISTOR	2SD0602AR
Q6002	2SB709A	TRANSISTOR	2SB0709A
Q6005	XN6501	TRANSISTOR-TRANSISTOR	XN06501
Q6007	2SD1819A	TRANSISTOR	2SD1819AW
Q6008	2SD601A	TRANSISTOR	2SD0601A
Q6009	2SD601A	TRANSISTOR	2SD0601A
Q6010	2SD601A	TRANSISTOR	2SD0601A
Q7601	2SD601A	TRANSISTOR	2SD0601A
Q7651	2SB709A	TRANSISTOR	2SB0709A
Q7652	XN6501	TRANSISTOR-TRANSISTOR	XN06501
QR1002	UN2212	TRANSISTOR-RESISTOR	UNR2212
QR1003	UN2112	TRANSISTOR	UNR2112
QR1006	UN2212	TRANSISTOR-RESISTOR	UNR2212
QR3003	UN2213	TRANSISTOR-RESISTOR	UNR2213
QR3005	UN2113	TRANSISTOR-RESISTOR	UNR2113
QR3006	UN2113	TRANSISTOR-RESISTOR	UNR2113
QR3007	UN2211	TRANSISTOR	UNR2211
QR3008	UN2113	TRANSISTOR-RESISTOR	UNR2113
QR3009	XN1213	TWIN TRANSISTOR	XN01213
QR3011	UN2113	TRANSISTOR-RESISTOR	UNR2113
QR3012	UN2211	TRANSISTOR	UNR2211
QR4002	UN2211	TRANSISTOR	UNR2211
QR4003	XN1215	TWIN TRANSISTOR	XN01215

Ref. No.	Part No.	Part Name & Description	Remarks
QR4005	UN2111	TRANSISTOR	UNR2111
QR4006	UN2212	TRANSISTOR-RESISTOR	UNR2212
QR4501	UN2113	TRANSISTOR-RESISTOR	UNR2113
QR4502	UN2113	TRANSISTOR-RESISTOR	UNR2113
QR4503	XN0121600L	SILICON TRANSISTOR	[SUPPLIED FROM MBV]
QR4504	XN0121600L	SILICON TRANSISTOR	[SUPPLIED FROM MBV]
QR4507	UN2216	TRANSISTOR	UNR2216
QR4508	UN2211	TRANSISTOR	UNR2211
QR6001	UN2215	TRANSISTOR-RESISTOR	UNR2215
QR6002	XN1212	TWIN TRANSISTOR	XN01212
QR6004	XN1211	TRANSISTOR	XN01211
QR6005	UN2211	TRANSISTOR	UNR2211
QR6006	UN211F	TRANSISTOR-RESISTOR	UNR211F
QR7601	UN2211	TRANSISTOR	UNR2211
R0701	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	NV-HS870B-S
R0705	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R0707	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	
R0708	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R0711	ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	
R0713	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R0715	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	
R0717	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R0719	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R0725	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R0727	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R0728	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	NV-HS870B-S
R0729	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R0730	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	NV-HS870EG-S/EC-S
R0740	ERJ3GEYG471	M.RESISTOR CH 1/16W 470	
R0741	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R0742	ERJ8GEYJ151	M.RESISTOR CH 1/8W 150	
R0745	ERJ6GEYJ335	M.RESISTOR CH 1/10W 3.3M	
R1001	ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	
R1002	ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	
R1003	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R1004	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R1005	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	
R1006	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R1007	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R1008	ERDS2TJ102	C.RESISTOR 1/4W 1K	
R1009	ERDS2TJ561	C.RESISTOR 1/4W 560	
R1010	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R1011	ERJ6GEYG562	M.RESISTOR CH 1/10W 5.6K	
R1012	ERJ6GEYG622	M.RESISTOR CH 1/10W 6.2K	
R1013	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	
R1014	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R1015	ERDS2TJ682	C.RESISTOR 1/4W 6.8K	
R1016	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R1017	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R1018	ERJ6GEYG272	M.RESISTOR CH 1/10W 2.7K	
R1019	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R1021	ERJ6GEYG272	M.RESISTOR CH 1/10W 2.7K	
R1022	ERDS2TJ561	C.RESISTOR 1/4W 560	

Ref. No.	Part No.	Part Name & Description	Remarks
R1023	ERDS2TJ123	C.RESISTOR 1/4W 12K	
R1024	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	
R1025	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	
R1102	ERDS2TJ105	C.RESISTOR 1/4W 1M	
R1103	ERDS2TJ105	C.RESISTOR 1/4W 1M	
R1104	ERDS2TJ102	C.RESISTOR 1/4W 1K	
R1105	ERDS2TJ101	C.RESISTOR 1/4W 100	
R1106	ERG2SJ331	M.RESISTOR 2W 330	
R1107	ERDS2TJ101	C.RESISTOR 1/4W 100	
R1108	ERX1SJR51	M.RESISTOR 1W 0.51	
R1109	ER0S2CKG1801	M.RESISTOR 1/4W 1.8K	
R1110	ERDS2TJ104	C.RESISTOR 1/4W 100K	
R1111	ERDS2TJ331	C.RESISTOR 1/4W 330	
R1112	ERDS2TJ3R3	C.RESISTOR 1/4W 3.3	
R1113	ERDS2TJ330	C.RESISTOR 1/4W 33	
R1201	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	
R1202	ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	
R1203	ERJ6GEYG273	M.RESISTOR CH 1/10W 27K	
R1204	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	
R1205	ERJ6GEYG222	M.RESISTOR CH 1/10W 2.2K	
R1206	ERJ6GEYF333	M.RESISTOR CH 1/10W 33K	
R1207	ERJ6GEYG393	M.RESISTOR CH 1/10W 39K	
R1208	ERJ6GEYF822	M.RESISTOR CH 1/10W 8.2K	
R1209	ERJ6GEYG563	M.RESISTOR CH 1/10W 56K	
R1501	ERDS2TJ121	C.RESISTOR 1/4W 120	
R1502	ERDS2TJ181	C.RESISTOR 1/4W 180	
R1503	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	
R1504	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	
R1505	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R1506	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R2501	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R2502	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R2503	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R2504	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R2505	ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	
R2506	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	
R2507	ERJ6GEYJ274	M.RESISTOR CH 1/10W 270K	
R2508	ERJ6GEYG433	M.RESISTOR CH 1/10W 43K	
R2509	ERDS2TJ331	C.RESISTOR 1/4W 330	
R2511	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	
R2512	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	
R2517	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R2518	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R2519	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R2520	ERJ6GEYJ1R2	M.RESISTOR CH 1/10W 1.2	
R2521	ERJ6GEYJ1R5	M.RESISTOR CH 1/10W 1.5	[SUPPLIED FROM MBV]
R2522	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R2523	ERJ6GEYG912	M.RESISTOR CH 1/10W 9.1K	
R3001	ERJ6GEYG622	M.RESISTOR CH 1/10W 6.2K	
R3003	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	
R3005	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	
R3006	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R3010	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R3011	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	

Ref. No.	Part No.	Part Name & Description	Remarks
R3012	ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	
R3014	ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	
R3016	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	
R3017	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	
R3018	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R3019	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	
R3020	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R3021	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3022	ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	
R3023	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R3024	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	
R3025	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3028	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R3029	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	
R3030	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	
R3035	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R3038	ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	
R3039	ERJ6GEYJ751	M.RESISTOR CH 1/10W 750	
R3040	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	
R3041	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R3042	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R3043	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3044	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R3046	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	
R3047	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R3048	ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	
R3049	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	
R3050	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R3051	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3053	ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	
R3054	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R3055	ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	
R3060	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R3062	ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	
R3063	ERJ6GEYG102	M.RESISTOR CH 1/10W 1K	
R3064	ERJ6GEYG102	M.RESISTOR CH 1/10W 1K	
R3065	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	
R3067	ERJ6GEYJ302	M.RESISTOR CH 1/10W 3K	
R3073	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R3074	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3076	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R3501	ERJ3GEYG222	M.RESISTOR CH 1/16W 2.2K	
R3502	ERJ6GEYG152	M.RESISTOR CH 1/10W 1.5K	
R3503	ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	
R3504	ERJ3GEYG152	M.RESISTOR CH 1/16W 1.5K	
R3505	ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	
R3506	ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	
R3507	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	
R3508	ERJ3GEYG471	M.RESISTOR CH 1/16W 470	
R3509	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	
R3510	ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	
R3511	ERJ3GEYG122	M.RESISTOR CH 1/16W 1.2K	
R3512	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R3513	ER0S2CKG3900	M.RESISTOR 1/4W 390	

Ref. No.	Part No.	Part Name & Description	Remarks
R3991	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4061	ERJ6GEYJ334	M.RESISTOR CH 1/10W 330K	
R4062	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R4063	ERJ6GEYJ241	M.RESISTOR CH 1/10W 240	
R4065	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	
R4066	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R4067	ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	
R4068	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R4069	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	
R4070	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R4071	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R4072	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	
R4081	ERJ6GEYJ752	M.RESISTOR CH 1/10W 7.5K	
R4082	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	
R4084	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4085	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	
R4086	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	
R4087	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4088	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4089	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	
R4090	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4091	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	
R4501	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R4502	ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	
R4503	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R4504	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R4505	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R4506	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R4507	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R4508	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4509	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R4510	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R4511	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4512	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4513	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R4514	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R4515	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R4516	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	
R4517	ERJ6GEYJ511	M.RESISTOR CH 1/10W 510	
R4518	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4519	ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	
R4520	ERJ6GEYJ124	M.RESISTOR CH 1/10W 120K	
R4521	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R4522	ERJ6GEYJ511	M.RESISTOR CH 1/10W 510	
R4523	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R4524	ERJ6GEYJ303	M.RESISTOR CH 1/10W 30K	
R4525	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R4526	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R4527	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R4530	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	
R4531	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R4532	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	
R4533	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R4534	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	

Ref. No.	Part No.	Part Name & Description	Remarks
R4535	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R4536	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	
R4537	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R4538	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R4539	ERJ3GEYJ362	M.RESISTOR CH 1/16W 3.6K	
R4540	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	
R4543	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6002	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R6003	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R6004	ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	
R6005	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R6008	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	
R6009	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R6010	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6011	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6012	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6013	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6014	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R6015	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R6016	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R6017	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R6018	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6019	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R6020	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	
R6021	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	
R6022	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R6023	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	
R6024	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6025	ERJ6GEYJ433	M.RESISTOR CH 1/10W 43K	
R6026	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	
R6027	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6028	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6029	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6030	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6031	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	
R6032	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R6033	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	
R6035	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R6036	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R6039	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R6040	ERDS2TJ102	C.RESISTOR 1/4W 1K	
R6041	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R6043	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R6045	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	
R6046	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6047	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6048	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6049	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6062	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R6063	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	
R6064	ERJ6GEYJ225	M.RESISTOR CH 1/10W 2.2M	
R6065	ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	
R6066	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	
R6067	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6068	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R6069	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	
R6071	ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	
R6072	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R6073	ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	
R6074	ERDS2TJ471	C.RESISTOR 1/4W 470	
R6075	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R6076	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	
R6077	ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	
R6078	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R6079	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R6080	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R6081	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R7301	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870EG-S
R7302	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	NV-HS870B-S/EC-S
R7304	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	NV-HS870EG-S
R7305	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	NV-HS870EG-S
R7305	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	NV-HS870B-S/EC-S
R7306	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	NV-HS870EG-S
R7306	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	NV-HS870B-S/EC-S
R7307	ERJ6GEYG682	M.RESISTOR CH 1/10W 6.8K	NV-HS870EG-S
R7308	ERJ6GEYG682	M.RESISTOR CH 1/10W 6.8K	NV-HS870EG-S
R7309	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	NV-HS870EG-S
R7311	ERJ6GEYJ752	M.RESISTOR CH 1/10W 7.5K	NV-HS870EG-S
R7312	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	NV-HS870EG-S
R7313	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	NV-HS870EG-S
R7314	ERJ6GEYG332	M.RESISTOR CH 1/10W 3.3K	NV-HS870EG-S
R7315	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870EG-S
R7316	ERJ6GEYG682	M.RESISTOR CH 1/10W 6.8K	NV-HS870EG-S
R7316	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	NV-HS870B-S/EC-S
R7317	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870EG-S
R7318	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	NV-HS870EG-S
R7319	ERJ6GEYG332	M.RESISTOR CH 1/10W 3.3K	NV-HS870EG-S
R7320	ERJ6GEYG332	M.RESISTOR CH 1/10W 3.3K	NV-HS870EG-S
R7324	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	NV-HS870B-S/EC-S
R7325	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	NV-HS870B-S/EC-S
R7327	ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	NV-HS870B-S/EC-S
R7328	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	NV-HS870B-S/EC-S
R7329	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	NV-HS870B-S/EC-S
R7501	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	
R7502	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	
R7503	ERJ6GEYJ432	M.RESISTOR CH 1/10W 4.3K	
R7504	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	
R7505	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	
R7506	ERJ6GEYJ432	M.RESISTOR CH 1/10W 4.3K	
R7508	ERDS2TJ150	C.RESISTOR 1/4W 15	
R7509	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R7510	ERDS2TJ821	C.RESISTOR 1/4W 820	
R7511	ERDS2TJ821	C.RESISTOR 1/4W 820	
R7512	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R7513	ERJ6GEYJ303	M.RESISTOR CH 1/10W 30K	
R7514	ERJ6GEYJ303	M.RESISTOR CH 1/10W 30K	
R7515	ERJ6GEYJ303	M.RESISTOR CH 1/10W 30K	
R7516	ERJ6GEYJ303	M.RESISTOR CH 1/10W 30K	

Ref. No.	Part No.	Part Name & Description	Remarks
R7517	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R7518	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R7519	ERJ6GEYJ432	M.RESISTOR CH 1/10W 4.3K	
R7521	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R7522	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	
R7523	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	
R7533	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R7534	ERJ6GEYJ181	M.RESISTOR CH 1/10W 180	
R7535	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R7536	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	
R7537	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	
R7538	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	
R7601	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R7602	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R7603	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R7605	ERDS2TJ331	C.RESISTOR 1/4W 330	
R7606	ERDS2TJ331	C.RESISTOR 1/4W 330	
R7608	ERJ6GEYJ151	M.RESISTOR CH 1/10W 150	
R7609	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R7610	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	
R7612	ERJ6GEYJ151	M.RESISTOR CH 1/10W 150	
R7613	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	
R7614	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R7615	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R7616	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
R7651	ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	
R7652	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	
R7653	ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	
R7654	ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	
S1501	K0G934A00002	SWITCH	K0ZZ00000452
S1502	VST0325	CASSETTE DET. SWITCH	K0L1BA000026
S7501	EVQ11G07K	SWITCH	
S7502	EVQ11G07K	SWITCH	
S7503	EVQ11404M	SWITCH	
S7504	EVQ11404M	SWITCH	
S7507	VES0834	S-TAB SWITCH	K0J1BB000004
S7508	EVQ11L07B	SWITCH	
S7509	EVQ11L07B	SWITCH	
S7510	EVQ11G07K	SWITCH	
S7512	EVQ11G07K	SWITCH	
S7513	EVQ11L07B	SWITCH	
S7515	EVQ11L07B	SWITCH	
S7516	EVQ11G07K	SWITCH	
T0701	EQV5EC082P	TRANSFORMER	NV-HS870EG-S/EC-S
T0701	EQV5EC083P	TRANSFORMER	NV-HS870B-S
T1101	G4D2A0000073	SWITCHING TRANSFORMER	⚠[SUPPLIED FROM MBV]
T4001	EQQ7QF025P	TRANSFORMER	
T4002	EQQ7QF026P	TRANSFORMER	
TU7601	ENG47316G1	TUNER	⚠NV-HS870EG-S/EC-S[SUPPLIED FROM MBV]

Ref. No.	Part No.	Part Name & Description	Remarks
TU7601	ENG47317G1	TUNER	⚠NV-HS870B-S[SUPPLIED FROM MBV]
VR0701	EVNCBAA00B14	V.RESISTOR	
VR7301	EVNCBAA00B14	V.RESISTOR	NV-HS870EG-S
X0701	VLF1416	FILTER	NV-HS870EG-S/EC-S J0B4045A0002
X0701	VLF1417	FILTER	NV-HS870B-S J0B4155A0003
X0704	VLF1493	FILTER	NV-HS870EG-S/EC-S
X0704	VLF1495	FILTER	NV-HS870B-S
X3001	H0D443400031	CRYSTAL OSCILLATOR	[SUPPLIED FROM MBV]
X6001	VSX0660	CRYSTAL OSCILLATOR	H0A327200032
X6002	H0D200500014	CRYSTAL OSCILLATOR	[SUPPLIED FROM MBV]
X7301	VSX1086	CRYSTAL OSCILLATOR	NV-HS870EG-S[SUPPLIED FROM MBV]
X7302	VSX0953	CRYSTAL OSCILLATOR	NV-HS870B-S/EC-S H0D245500006
		MISCELLANEOUS	
	EYF52BC	FUSE HOLDER	K3GD9BB00001
	EYF52BC	FUSE HOLDER	K3GD9BB00001
	VMP6823	INLET ANGLE	[SUPPLIED FROM MBV]
	VSC5227	HA CASE	[SUPPLIED FROM MBV]
	VSC4998	HA ANGLE	
	VMP4894	SUPPORT ANGLE	NV-HS870EG-SFOR DECODER C.B.A.
	VSC4752	SHIELD CASE (MAIN)	NV-HS870B-S/EC-SFOR NICAM DECODER C.B.A.
	VMP5897	CONNECTING ANGLE	FOR TV DEMODULATOR C.B.A.
■	VEP03F76B	DNR C.B.A.	[SUPPLIED FROM MBV](RTL)
C3301	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3302	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3303	ECUX1H681JCV	C.CAPACITOR CH 50V 680P	
C3304	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3305	ECEA1CKS100	E.CAPACITOR 16V 10U	
C3306	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3307	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	ECJ1XC1H330J
C3308	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3309	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C3310	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3311	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3312	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3313	F2A1C100A111	E.CAPACITOR 16V 10U	
C3314	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3315	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3316	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3317	ECUM1C474KBN	C.CAPACITOR CH 16V 0.47U	
C3318	F2A1C100A111	E.CAPACITOR 16V 10U	
C3319	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3320	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3321	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3322	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C3323	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	

Ref. No.	Part No.	Part Name & Description	Remarks
C3324	ECQB1H153JF	P.CAPACITOR 50V 0.015U	
C3326	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C3327	ECUX1H080DCV	C.CAPACITOR CH 50V 8P	
C3328	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C3329	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C3331	ECUX1H080DCV	C.CAPACITOR CH 50V 8P	
C3332	ECUX1H030CCV	C.CAPACITOR CH 50V 3P	ECJ1XC1H030C
C3333	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C3334	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
C3336	ECUX1H560JCV	C.CAPACITOR CH 50V 56P	
C3337	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3338	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C3340	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3341	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3342	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	ECJ1XF1C104Z
C3343	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	ECJ1XC1H330J
C3344	ECUX1H100DCV	C.CAPACITOR CH 50V 10P	
C3361	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3362	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3363	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3364	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3365	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3366	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C3367	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3368	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3369	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3370	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3371	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3372	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3373	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3374	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3375	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3376	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3377	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3378	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3379	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C3380	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3381	ECUX1H181JCV	C.CAPACITOR CH 50V 180P	ECJ1XC1H181J
C3382	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3383	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3384	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3385	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3386	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3387	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3388	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C3389	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3390	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3391	ECUX1H150JCV	C.CAPACITOR CH 50V 15P	ECJ1XC1H150J
C3392	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	
C3393	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3395	ECUX1H080DCV	C.CAPACITOR CH 50V 8P	
C3396	ECUX1H030CCV	C.CAPACITOR CH 50V 3P	ECJ1XC1H030C
C3397	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C3398	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	

Ref. No.	Part No.	Part Name & Description	Remarks
C3399	ECUX1H030CCV	C.CAPACITOR CH 50V 3P	ECJ1XC1H030C
C3400	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	
C3401	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3402	F2A0J470A117	E.CAPACITOR 6.3V 47U	
C3403	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3404	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3405	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A1050002
C3407	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
C3409	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3410	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C3411	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3412	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C3413	ECUX1H080DCV	C.CAPACITOR CH 50V 8P	
C3414	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C3415	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3419	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3420	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3421	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3422	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3423	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3424	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3425	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	
C3426	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3427	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3428	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C3429	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A1050002
C3430	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3431	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3432	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3433	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
D3301	MA142K	DIODE	
D3302	HVU17TRF	DIODE	B0CCAB000006
D3303	MA8027H	DIODE	[SUPPLIED FROM MBV]
D3304	MA142K	DIODE	
FL3302	F1J1E223A108	CERAMIC CAPACITOR	[SUPPLIED FROM MBV]F1J1E223A107
FL3303	F1J1E223A108	CERAMIC CAPACITOR	[SUPPLIED FROM MBV]F1J1E223A107
FL3304	F1J1E223A108	CERAMIC CAPACITOR	[SUPPLIED FROM MBV]F1J1E223A107
FL3305	F1J1E223A108	CERAMIC CAPACITOR	[SUPPLIED FROM MBV]F1J1E223A107
FL3306	F1J1E223A108	CERAMIC CAPACITOR	[SUPPLIED FROM MBV]F1J1E223A107
IC3301	C1AB00001312	IC	[SUPPLIED FROM MBV]C1AB00001311
IC3302	TC90A11F	IC	C1AB00000944
IC3303	MSM518221A25	IC	C3ZBJ0000006
IC3304	PST9142NR	IC	C0EBH0000095
IC3305	BA10393F	IC	C0BBBA000057
IC3306	TA1225N	IC	C1AA00000343
IC3307	TCHC4538AF	IC	C0JBAM000069
K3301	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3302	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3303	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3304	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	

Ref. No.	Part No.	Part Name & Description	Remarks
K3305	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3306	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3307	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3308	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3313	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3314	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3315	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3316	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3317	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3318	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3319	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3320	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3321	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3322	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3323	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K3327	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
L3301	VLQ0163J220	COIL 22UH	G1C220J00008
L3302	VLQ0163J220	COIL 22UH	G1C220J00008
L3303	VLQ0163J220	COIL 22UH	G1C220J00008
L3304	VLQ0163J270	COIL 27UH	G1C270J00002
L3305	VLQ0163J470	COIL 47UH	G1C470J00001
L3306	VLQ0163J390	COIL 39UH	G1C390J00001
L3307	VLQ0163J220	COIL 22UH	G1C220J00008
L3308	VLQ0163J100	COIL 10UH	G1C100J00009
L3309	VLQ0163K330	COIL 33UH	
L3310	VLQ0163J470	COIL 47UH	G1C470J00001
L3311	VLQ0163J220	COIL 22UH	G1C220J00008
L3313	ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	
L3314	VLQ0163J270	COIL 27UH	G1C270J00002
L3315	VLQ0163J220	COIL 22UH	G1C220J00008
L3316	VLQ0163J220	COIL 22UH	G1C220J00008
L3317	VLQ0163J220	COIL 22UH	G1C220J00008
L3318	VLQ0163J220	COIL 22UH	G1C220J00008
L3319	VLQ0163J270	COIL 27UH	G1C270J00002
L3320	VLQ0163J150	COIL 15UH	G1C150J00007
LB3301	VLP0196	CHIP INDUCTOR	J0JHC0000028
LB3302	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	
LB3306	VLP0145	COIL	
LB3307	VLP0145	COIL	
LB3308	VLP0145	COIL	
PS3301	VJS3186B018	CONNECTOR (FEMALE) 18P	K1KB18B00016
PS3302	VJS3042B004W	CONNECTOR (FEMALE) 4P	
Q3301	2SB1218A	TRANSISTOR	
Q3302	2SC3930	CHIP TRANSISTOR	
Q3303	2SB1218A	TRANSISTOR	
Q3305	2SB1218A	TRANSISTOR	
Q3307	2SB1218A	TRANSISTOR	
Q3310	2SD1819A	TRANSISTOR	2SD1819AW
Q3311	2SC3930	CHIP TRANSISTOR	
Q3312	2SD1819A	TRANSISTOR	2SD1819AW

Ref. No.	Part No.	Part Name & Description	Remarks
Q3316	2SB1218A	TRANSISTOR	
Q3317	2SB1218A	TRANSISTOR	
Q3319	2SB1218A	TRANSISTOR	
Q3320	2SD1819A	TRANSISTOR	2SD1819AW
Q3321	2SB1218A	TRANSISTOR	
Q3322	2SD1819A	TRANSISTOR	2SD1819AW
Q3323	2SD1819A	TRANSISTOR	2SD1819AW
Q3324	2SD1819A	TRANSISTOR	2SD1819AW
Q3325	2SD1819A	TRANSISTOR	2SD1819AW
Q3326	2SD1819A	TRANSISTOR	2SD1819AW
Q3327	2SD1819A	TRANSISTOR	2SD1819AW
Q3328	2SB1218A	TRANSISTOR	
R3301	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3302	ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	
R3303	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R3304	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R3305	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3306	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3307	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R3309	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3310	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	
R3311	ERJ3GEYG561	M.RESISTOR CH 1/16W 560	
R3312	ERJ3GEYG621	M.RESISTOR CH 1/16W 620	
R3313	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	
R3314	ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	
R3315	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	
R3316	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	
R3317	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	
R3318	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	
R3319	ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	
R3320	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3321	ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	
R3322	ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	D0GB391JA002
R3323	ERJ3GEYG114	M.RESISTOR CH 1/16W 110K	
R3324	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	
R3325	ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	
R3326	ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	
R3327	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3328	ERJ3GEYJ751	M.RESISTOR CH 1/16W 750	
R3329	ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	
R3330	ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	
R3331	ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	
R3334	ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	D0GB391JA002
R3335	ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	
R3336	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	
R3337	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	
R3338	ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	
R3339	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R3340	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R3341	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3342	ERJ3GEYJ621	M.RESISTOR CH 1/16W 620	
R3343	ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	
R3355	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002

Ref. No.	Part No.	Part Name & Description	Remarks
R3356	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R3357	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R3358	ERJ3RBD332	M.RESISTOR CH 1/16W 3.3K	
R3359	ERJ3RBD332	M.RESISTOR CH 1/16W 3.3K	
R3360	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R3361	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R3362	ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	
R3363	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3364	ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	
R3365	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	
R3366	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	
R3367	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R3368	ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	
R3370	ERJ3GEYJ621	M.RESISTOR CH 1/16W 620	
R3373	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3374	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R3375	ERJ3GEYJ751	M.RESISTOR CH 1/16W 750	
R3376	ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	
R3377	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3380	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3381	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	
R3382	ERJ3GEYJ431	M.RESISTOR CH 1/16W 430	
R3383	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	
R3384	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3385	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	
R3386	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R3387	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3388	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3390	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3391	ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	
R3392	ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	
R3393	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3394	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R3395	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
VR3001	EVM7JGA00B15	V.RESISTOR 0.1M	EVM7JSX30B15
VR3002	EVM7JGA00B54	V.RESISTOR 50K	
X3301	VSX1110	CRYSTAL OSCILLATOR	[SUPPLIED FROM MBV]H0D177500006
		MISCELLANEOUS	
	VSC5228	SHIELD CASE (A)	[SUPPLIED FROM MBV]
	VSC5229	SHIELD CASE (B)	[SUPPLIED FROM MBV]
	XTV26+6F	SCREW	
	XTV26+6F	SCREW	
	VMT0543	CUSHION	[SUPPLIED FROM MBV]
■	VEP03F87C	INPUT/OUTPUT PACK C.B.A.	[SUPPLIED FROM MBV](RTL)
C3903	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3904	ECUM1H103KBG	C.CAPACITOR CH 50V 0.01U	[SUPPLIED FROM MBV]
C3905	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	

Ref. No.	Part No.	Part Name & Description	Remarks
C3906	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3907	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3908	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3909	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3910	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C3911	ECEA0JKS331	E.CAPACITOR 6.3V 330U	
C3912	ECEA1CKS100	E.CAPACITOR 16V 10U	
C3913	ECEA0JKA331	E.CAPACITOR 6.3V 330U	
C3914	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3915	ECEA0JKA470	E.CAPACITOR 6.3V 47U	
C3916	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C3918	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3919	ECEA1CKA470	E.CAPACITOR 16V 47U	
C3920	ECEA1CKA470	E.CAPACITOR 16V 47U	
C3921	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3922	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3923	ECEA0JKA331	E.CAPACITOR 6.3V 330U	
C3924	ECUM1E104KBX	C.CAPACITOR CH 25V 0.1U	[SUPPLIED FROM MBV]
C3925	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3926	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3927	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C3928	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3929	ECEA0JKA331	E.CAPACITOR 6.3V 330U	
C3930	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3931	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	ECJ1XB1C104K
C3934	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C3935	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C3936	ECEA0JKA331	E.CAPACITOR 6.3V 330U	
C3937	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3942	ECEA1CKA100	E.CAPACITOR 16V 10U	
C3943	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C3944	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C3945	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
C3946	ECUX1H150JCV	C.CAPACITOR CH 50V 15P	ECJ1XC1H150J
C3947	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	
C3948	ECUX1H040CCV	C.CAPACITOR CH 50V 4P	
C4901	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
C4902	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
C4903	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C4904	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C4907	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C4908	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C4909	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
C4910	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
D3901	MA165	DIODE	MA2C165
D3902	MA4075N-M	DIODE	
D3903	MA4075N-M	DIODE	
IC3901	AN3581S	IC	
IC3902	LA73021M	IC	C1AB00000933
IC3903	C1AB00001340	IC	[SUPPLIED FROM MBV]C1AB00001341
JK3902	VJJ0416	JACK	K2HA307A0001

Ref. No.	Part No.	Part Name & Description	Remarks
JK3904	VJJ0574	S TERMINAL	K1CB104A0009
JK3905	VJS1470	CONNECTOR (FEMALE) 21P	K1FB121A0002
JK3906	VJS1470	CONNECTOR (FEMALE) 21P	K1FB121A0002
JK3907	VJJ0169	REMOTE CONTROLLER JACK	K2HD103A0003
JK3908	K2HZ105A0002	5P SOCKET	[SUPPLIED FROM MBV]
L3901	VLQ0599J330	COIL 33UH	G0C330JA0026
L3903	VLQ0599J330	COIL 33UH	G0C330JA0026
L3904	VLQ0599J330	COIL 33UH	G0C330JA0026
L3905	VLQ0599J330	COIL 33UH	G0C330JA0026
L3906	VLQ0599J330	COIL 33UH	G0C330JA0026
L3907	VLQ0599J330	COIL 33UH	G0C330JA0026
L3908	VLQ0163J390	COIL 39UH	G1C390J00001
L3909	VLQ0163J820	COIL 82UH	G1C820J00002
L4901	VLQ0599JR22	COIL 0.22UH	
LB3901	VLP0147	COIL	J0JBC0000041
LB3902	VLP0147	COIL	J0JBC0000041
LB4901	VLP0147	COIL	J0JBC0000041
LB4902	VLP0147	COIL	J0JBC0000041
LB4903	VLP0147	COIL	J0JBC0000041
LB4904	VLP0147	COIL	J0JBC0000041
LB4905	VLP0147	COIL	J0JBC0000041
LB4906	VLP0147	COIL	J0JBC0000041
LB4908	VLP0147	COIL	J0JBC0000041
LB4909	VLP0147	COIL	J0JBC0000041
LB4912	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
LB4913	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
PS3901	K1KB03B00007	CONNECTOR	[SUPPLIED FROM MBV]
PS3902	VJS3042B014W	CONNECTOR (FEMALE) 14P	K1KB14B00017
PS3903	VJS3042B006W	CONNECTOR (FEMALE) 6P	K1KB06B00015
PS3904	VJS3042F016W	CONNECTOR (FEMALE) 16P	K1KB16B00023
PS3905	VJS3042B014W	CONNECTOR (FEMALE) 14P	K1KB14B00017
Q3902	2SD601A	TRANSISTOR	2SD0601A
Q3903	2SD601A	TRANSISTOR	2SD0601A
Q3904	2SD601A	TRANSISTOR	2SD0601A
Q3905	2SD1328-S	TRANSISTOR	2SD13280S
Q3906	2SD601A	TRANSISTOR	2SD0601A
Q3907	2SB709A	TRANSISTOR	2SB0709A
QR3901	UN2212	TRANSISTOR-RESISTOR	UNR2212
QR3902	UN2113	TRANSISTOR-RESISTOR	UNR2113
QR3903	UN2113	TRANSISTOR-RESISTOR	UNR2113
R3903	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R3905	ERJ6GEYG102	M.RESISTOR CH 1/10W 1K	
R3906	ERJ6GEYG471	M.RESISTOR CH 1/10W 470	
R3907	ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	
R3908	ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	
R3909	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	
R3910	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	
R3911	ERJ6GEYG102	M.RESISTOR CH 1/10W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R3912	ERJ6GEYG911	M.RESISTOR CH 1/10W 910	
R3913	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R3914	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	
R3915	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R3916	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R3917	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	
R3918	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3919	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3920	ERDS2TJ471	C.RESISTOR 1/4W 470	
R3921	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	
R3922	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	
R3923	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	
R3924	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3925	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3926	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3928	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3930	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3931	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3932	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3933	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3934	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3936	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	
R3937	ERJ6GEYJ511	M.RESISTOR CH 1/10W 510	
R3938	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R3939	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R3940	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	
R3941	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	
R3942	ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	
R3943	ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	
R3944	ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	
R3945	ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	
R3947	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	
R3948	ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	
R3949	ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	
R3950	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	
R3951	ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	
R4901	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R4902	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R4903	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
R4904	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	
S3901	VSS0513	SLIDE SWITCH	K0D142A00023
		MISCELLANEOUS	
	XTV3+8GFZ	SCREW	
	XTV3+8GFZ	SCREW	
	XTV3+8GFZ	SCREW	
	VMC1737	RF EARTH SPRING	[SUPPLIED FROM MBV]
	VJH1197	JACK BOARD	[SUPPLIED FROM MBV]
■	VEP04782A	FRONT C.B.A.	[SUPPLIED FROM MBV](RTL)

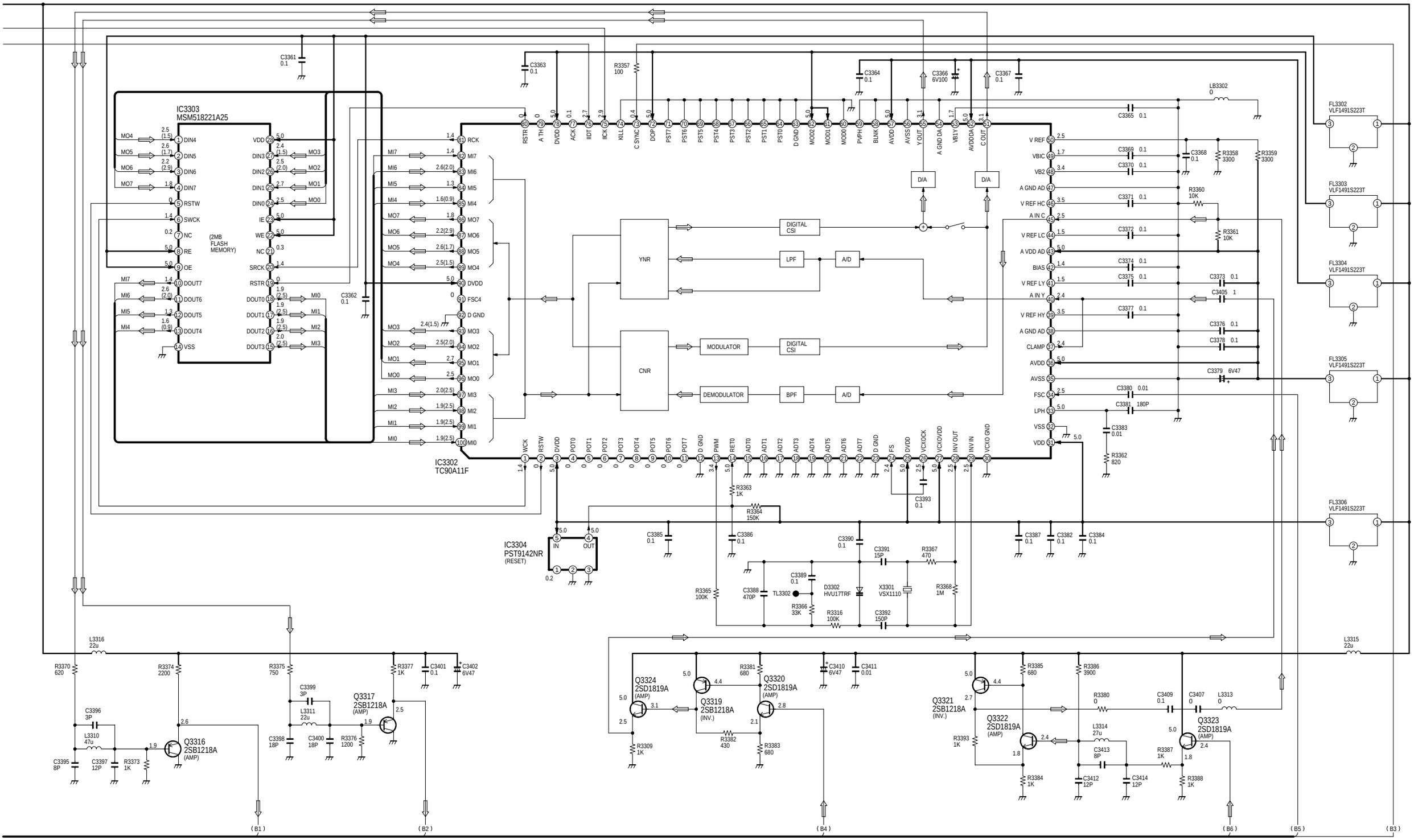
Ref. No.	Part No.	Part Name & Description	Remarks
C4803	ECKF1H102KB	C.CAPACITOR 50V 1000P	
C4804	ECKF1H102KB	C.CAPACITOR 50V 1000P	
C4805	ECQV1H104JL	P.CAPACITOR 50V 0.1U	
D4801	LN38GCPPSVT	LED	
JK4801	VJJ0573	3-PIN AV JACK	K2HA303A0004
JK4802	VJJ0574	S TERMINAL	K1CB104A0009
PS4801	VJS3042B014W	CONNECTOR (FEMALE) 14P	K1KB14B00017
R4801	ERDS2TJ750	C.RESISTOR 1/4W 75	
R4802	ERDS2TJ471	C.RESISTOR 1/4W 470	
R4803	ERDS2TJ471	C.RESISTOR 1/4W 470	
R4804	ERDS2TJ750	C.RESISTOR 1/4W 75	
R4805	ERDS2TJ750	C.RESISTOR 1/4W 75	
R4807	ERDS2TJ271	C.RESISTOR 1/4W 270	
S4801	EVQ11G07K	SWITCH	
S4802	EVQ11G07K	SWITCH	
S4803	EVQ11G07K	SWITCH	
		MISCELLANEOUS	
	VMC1721	EARTH SPRING	[SUPPLIED FROM MBV]
	VGQ0457	LED SPACER	
	VGQ6104	FRONT PCB HOLDER(L)	[SUPPLIED FROM MBV]
■	VEP06E13A	JOG C.B.A.	[SUPPLIED FROM MBV](RTL)
PS6301	VJS3042F007W	CONNECTOR (FEMALE) 7P	K1KB07B00013
S6309	VSQ0817	JOG/SHUTTLE ENCODER	
		MISCELLANEOUS	
	VGQ6105	FRONT PCB HOLDER(R)	[SUPPLIED FROM MBV]
■	VEP07A38B	OSD/SECAM C.B.A.	[SUPPLIED FROM MBV](RTL)
C7701	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7702	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	
C7703	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	
C7704	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7705	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C7706	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7707	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C7708	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C7709	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7710	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C7711	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	

Ref. No.	Part No.	Part Name & Description	Remarks
C7712	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7713	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7714	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7715	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7716	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C7717	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	ECJ1XC1H470J
C7718	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C7719	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	ECJ1XF1H103Z
C7720	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C7721	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C7722	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	F1J1C105A063
C7723	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	ECJ1XC1H471J
C7724	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7725	ECUX1H820JCV	C.CAPACITOR CH 50V 82P	
C7726	ECEA1EKN4R7	E.CAPACITOR 25V 4.7U	
C7727	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7728	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7729	ECEA0JKA101	E.CAPACITOR 6.3V 100U	
C7730	ECEA0JKA221	E.CAPACITOR 6.3V 220U	
C7731	ECEA0JKA221	E.CAPACITOR 6.3V 220U	
C7732	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	ECJ1XC1H101J
C7733	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C7734	ECUM0J475KBN	C.CAPACITOR CH 6.3V 4.7U	[SUPPLIED FROM MBV]
C7735	ECEA1CKA100	E.CAPACITOR 16V 10U	
C7736	ECEA1CKA100	E.CAPACITOR 16V 10U	
C7737	ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	
C7738	ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	
C7739	ECEA1CKA100	E.CAPACITOR 16V 10U	
C7740	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7741	ECEA1CKA100	E.CAPACITOR 16V 10U	
C7742	ECEA1CKA100	E.CAPACITOR 16V 10U	
IC7701	C2CBYG000005	IC	[SUPPLIED FROM MBV]
IC7702	C3DANG000039	IC	[SUPPLIED FROM MBV]
IC7704	BA6138	IC	C1BA00000060
K7704	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7705	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7707	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7708	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7709	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7710	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7711	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7712	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
L7701	ELJPA101KB	COIL 100UH	
L7702	ELJPA390KB	COIL 39UH	
L7703	ELJPA101KB	COIL 100UH	
L7704	ELJPA390KB	COIL 39UH	
L7705	ELJPA101KB	COIL 100UH	
P7701	VJS3537A016G	CONNECTOR (FEMALE) 16P	K1MN16A00035
P7702	VJS3537A012G	CONNECTOR (FEMALE) 12P	K1MN12A00033

Ref. No.	Part No.	Part Name & Description	Remarks
Q7701	2SB709A	TRANSISTOR	2SB0709A
Q7702	2SD601A	TRANSISTOR	2SD0601A
Q7703	XN6401	TRANSISTOR-TRANSISTOR	XN06401
Q7704	XN6501	TRANSISTOR-TRANSISTOR	XN06501
QR7701	XN6116	TRANSISTOR	[SUPPLIED FROM MBV]
R7701	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7702	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7703	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7704	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7705	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7706	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7707	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R7708	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R7709	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R7710	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R7711	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7712	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7714	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7716	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7717	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7718	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R7719	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R7720	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7721	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7722	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7723	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7724	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7725	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7726	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7727	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7728	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7729	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7730	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7731	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7732	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7733	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7734	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7735	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7736	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7737	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7738	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7739	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7740	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7741	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7742	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7743	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7744	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7745	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7746	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7747	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7748	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7749	ERJ3GEYJ511	M.RESISTOR CH 1/16W 510	

Ref. No.	Part No.	Part Name & Description	Remarks
R7750	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R7751	ERJ3GEYJ511	M.RESISTOR CH 1/16W 510	
R7752	ERJ3GEYJ511	M.RESISTOR CH 1/16W 510	
R7753	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	
R7754	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R7755	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	
R7756	ERJ3GEYG153	M.RESISTOR CH 1/16W 15K	
R7757	ERJ3GEYG152	M.RESISTOR CH 1/16W 1.5K	
R7758	ERJ3GEYG562	M.RESISTOR CH 1/16W 5.6K	
R7759	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	
R7760	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R7761	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	
R7762	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R7763	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7764	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R7765	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	
R7766	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	
R7767	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R7768	ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	
R7769	ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	
R7770	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	
R7771	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	
R7772	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R7773	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R7774	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7775	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7776	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7777	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7778	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	D0GB101JA002
R7781	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
X7701	VSX1043	CRYSTAL OSCILLATOR	
■	----------	CYLINDER STATOR C.B.A.	
		MISCELLANEOUS	
	VJS3537B009G	CONNECTOR (FEMALE) 9P	K1MN09B00023
	HW-300A-DF	HALL IC	B4AAB0000007

12. SCHEMATIC DIAGRAM FOR PRINTING WITH A4 SIZE



NV-HS870EG/B/EC DNR PACK SCHEMATIC DIAGRAM

NOTE:DO NOT ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC DNR PACK SCHEMATIC DIAGRAM

Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓣ :TO TIMER SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

TO INPUT/OUTPUT PACK PS3901(A-1)
PP3901: GND (AV) 1, GND (AV) 2, GND (AV) 3

TO INPUT/OUTPUT PACK PS3902(F-1)
PP3902: RFC VIDEO OUT 1, GND (AV) 2, AV1 A IN (R) 3, AV2 A IN (R) 4, GND (AV) 5, AV1 A IN (L) 6, AV2 A IN (L) 7, GND (AV) 8, AV1 A OUT (L) 9, AV1 A OUT (R) 10, GND (AV) 11, AV2 A OUT (R) 12, AV2 A OUT (L) 13, AV1 PB 12V 14

TO INPUT/OUTPUT PACK PS3903(B-1)
PP3903: LANC 1, PS 5V 2, GND (SYS) 3, 5P CLOCK 4, 5P DATA 5, GND (SYS) 6

TO INPUT/OUTPUT PACK PS3904(C-1)
PP3904: AV3 C IN 1, PS 12V 2, AV3 VIDEO IN 3, SLEEP Ⓗ 4, TUNER VIDEO IN 5, GND (AV) 6, OSD IIC DATA 7, OSD IIC CLOCK 8, GND (AV) 9, VV C OUT 10, GND (AV) 11, VV Y OUT 12, PS 5V 13, Y/C C OUT 14, EE Ⓗ 15, PROG Ⓗ 16

TO INPUT/OUTPUT PACK PS3905(E-1)
PP3905: Y/C Y OUT 1, GND (AV) 2, VIDEO/Y IN 3, GND (AV) 4, AV2/AV3 C IN 5, GND (AV) 6, N.SW 5V 7, GND (AV) 8, GND (AV) 9, GND (AV) 10, OSD VIDEO OUT 11, AV2 PB Ⓗ 12, PROJECT 50 13, S-VHS SW Ⓛ 14

TO FRONT PS4801(B-1)
PP3906: DNR SW 1, DNR LED 2, AV3 A IN (R) 3, GND (AV) 4, EJECT SW 5, POWER SW 6, GND (AV) 7, AV3 VIDEO IN 8, GND (FIP) 9, AV3 A IN (L) 10, AV3 C IN 11, GND (AV) 12, AV3 Y IN 13, AV3 S-VHS IN Ⓛ 14

TW3901

Ⓢ MAIN IIC CLOCK → A3
Ⓢ MAIN IIC DATA → A2
Ⓥ FSC → A1
Ⓢ MUTE Ⓗ

QR4501 UN2113 (BUFFER) -1.4 (-0.6)
QR4503 XN0121600L (MUTE) -1.4 (-0.6)
QR4504 XN0121600L (MUTE) -1.4 (-0.6)
QR4502 UN2113 (BUFFER) -1.3 (-0.6)
QR4507 UN2216 (MUTE)

L4502 1.2u
L4503 0
L3991 33u
L4501 1.2u

C4525 6V100
C4526 0.1
C4529 16V10
C4530 16V10
C4531 16V10
C4532 16V10
C4533 16V10
C4534 16V47
C4535 16V10
C4536 16V22
C4537 16V10
C4538 0.1
C4539 0.1
C4540 0.1
C4541 0.1
C4544 100P
C4545 100P
C3991 16V10
C3992 16V10
C3993 1
C3994 1

R4533 220
R4530 100K
R4531 220
R4532 100K
R4535 220
R4534 100K
R4538 220
R4536 100K
R4537 10K
R4543 220
R4540 22K
R3539 3600
R3991 4700

IC3901 C1AB00001340

IC4501 AN3656NFBPBV

IIC BUS INTERFACE
SWITCH RCH
SWITCH LCH
OUTPUT SELECT SWITCH RCH
OUTPUT SELECT SWITCH LCH
NORMAL OUTPUT SWITCH
DET
INPUT SWITCH RCH
INPUT SWITCH LCH
VCO FO
VCC
GND(R)
REC AGC ADJ.
MUTE CONTROL
GND
VREF
GND (L)
VCC2

R4522 510
C4524 0.047
C4523 10V33
R4521 4700
C4522 16V10
C4521 6V22
R4524 30K
R4523 1K
R4526 1K
R4525 1K

PNR RCH
AGC & SWITCH
FM MODULATOR/ DEMODULATOR
LPF
BPF
AGC
PREAMP & SWITCH
PNR LCH
REC AGC DET
ENV.DET OUT
REC DC2

R4520 120K
C4520 0.015
C4519 0.22
L4504 180u
C4518 100P
C4510 18P
QR4508 UN2211 (60Hz PB Ⓗ :ON)
R4519 820
TW4502
D4502 MA165
R4527 22K
TL4503
TW4511
C4517 0.1
TW4501
C4509 0.033
C4508 0.015
C4507 16V22
C4506 16V10
C4514 0.01
C4511 0.01

C4504 0.047
C4515 6V100
R4518 4700
R4517 510
C4505 10V33
C4516 0.1

R4505 4700, R4502 56K
R4506 4700, R4501 56K
R4507 10K, R4504 22K, R4508 4700, R4514 56K, R4509 4700, R4516 56K
R4510 10K, R4503 22K, R4511 4700, R4513 56K, R4512 4700, R4515 56K

60Hz PB Ⓗ → Ⓢ
D.FM REC Ⓗ → Ⓢ
ABS NORMAL Ⓗ → Ⓢ
A.HEAD SW → Ⓢ
GND (A) → Ⓥ
AUDIO HEAD L → Ⓥ
AUDIO HEAD R → Ⓥ
AUDIO HEAD COM → Ⓥ

B1 RFC VIDEO OUT Ⓡ
B6 AV1 PB 12V Ⓢ
B7 LANC Ⓢ
B8 5P CLOCK Ⓢ
B9 5P DATA Ⓢ
B11 SLEEP Ⓗ Ⓢ
B12 TUNER VIDEO Ⓡ
B13 OSD IIC DATA Ⓢ
B14 OSD IIC CLOCK Ⓢ
B15 VV C OUT Ⓥ
B16 VV Y OUT Ⓥ
B17 Y/C C OUT Ⓥ
B18 EE Ⓗ Ⓥ
B19 PROG Ⓗ Ⓢ
B20 Y/C Y OUT Ⓥ
B21 VIDEO/Y IN Ⓥ
B22 AV2/AV3 C IN Ⓥ
B23 OSD VIDEO OUT Ⓢ
B24 AV2 PB Ⓗ Ⓢ
B25 PROJECT 50 Ⓢ
B26 S-VHS SW Ⓛ Ⓢ
B27 DNR SW Ⓣ
B28 DNR LED Ⓢ
B30 EJECT SW Ⓣ
B31 POWER SW Ⓣ
B35 AUDIO IN (N) Ⓥ
B36 RFC AUDIO OUT Ⓡ
B37 AUDIO OUT (N) Ⓥ
B38 TUNER AUDIO (R) Ⓡ
B39 TUNER AUDIO (L) Ⓡ
GND Ⓡ
GND (SYS) Ⓡ
GND (LVM) Ⓡ
GND (HA2) Ⓡ

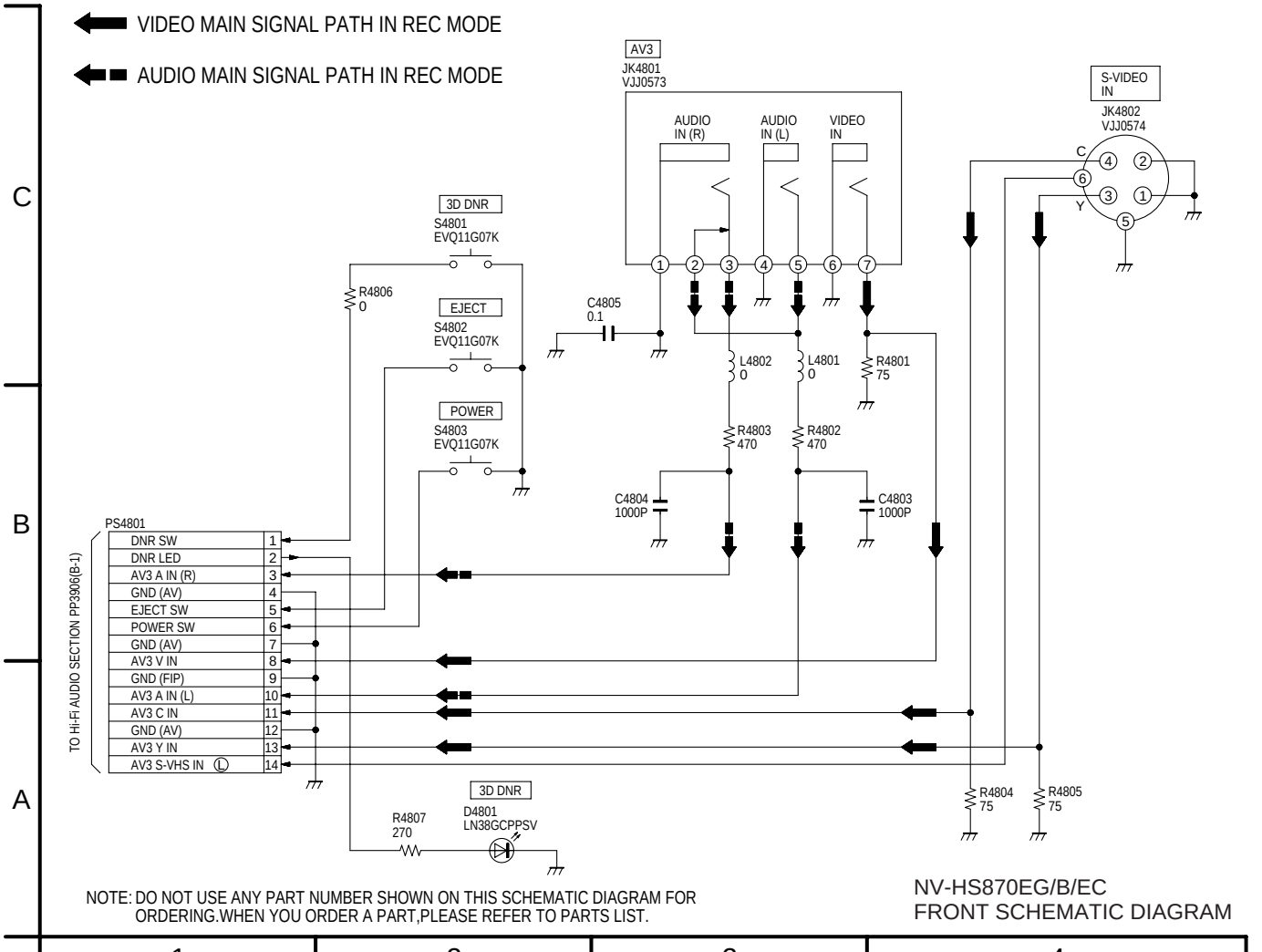
Ⓡ PS 5V
Ⓡ N.SW 5V
Ⓡ PS 12V
Ⓢ AC RCH
Ⓢ AC LCH
Ⓢ RFC MUTE Ⓗ
Ⓢ AV3 S-VHS IN Ⓛ

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
Hi-Fi AUDIO SECTION IN
MAIN SCHEMATIC DIAGRAM


VIDEO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AV3
JK4801
VJJ0573
AUDIO IN (R)
AUDIO IN (L)
VIDEO IN
S-VIDEO IN
JK4802
VJJ0574
C
Y
3D DNR
S4801
EVQ11G07K
R4806
0
EJECT
S4802
EVQ11G07K
POWER
S4803
EVQ11G07K
C4805
0.1
L4802
0
L4801
0
R4801
75
R4803
470
R4802
470
C4804
1000P
C4803
1000P
PS4801
DNR SW 1
DNR LED 2
AV3 A IN (R) 3
GND (AV) 4
EJECT SW 5
POWER SW 6
GND (AV) 7
AV3 V IN 8
GND (FIP) 9
AV3 A IN (L) 10
AV3 C IN 11
GND (AV) 12
AV3 Y IN 13
AV3 S-VHS IN Ⓛ 14
TO Hi-Fi AUDIO SECTION PP3906(B-1)
3D DNR
D4801
LN38GCPPSV
R4807
270
R4804
75
R4805
75
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NV-HS870EG/B/EC
FRONT SCHEMATIC DIAGRAM
C
B
A
1
2
3
4

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

IC3901 AN3581S
IC3903 C1AB00001340
IC3902 LA73021M
Q3902 2SD601A (AMP)
Q3905 2SD1328 (RGB ON:ON)
Q3906 2SD601A (AMP)
Q3907 2SB709A (INV.)
QR3901 UN2212 (RGB OFF(H):ON)
QR3902 UN2113 (AV3(L):ON)
QR3903 UN2113 (RGB ON:ON)
Q3903 2SD601A (PROG(H):ON)
Q3904 2SD601A (PROG(H):ON)

PS3902 — TO HI-FI AUDIO SECTION(FP9302(E-1))
RFC VIDEO OUT	1	A1
GND (AV)	2	
AV1 A IN (R)	3	A2
AV2 A IN (R)	4	A3
GND (AV)	5	
AV1 A IN (L)	6	A4
AV2 A IN (L)	7	A5
GND (AV)	8	
AV1 A OUT (L)	9	A6
AV1 A OUT (R)	10	A7
GND (AV)	11	
AV2 A OUT (R)	12	A8
AV2 A OUT (L)	13	A9
AV1 PB 12V	14	A10

PS3905 — TO HI-FI AUDIO SECTION(FP9305(C-1))
Y/C Y OUT	1	A11
GND (AV)	2	
VIDEO/Y IN	3	B1
GND (AV)	4	
AV2/AV3 C IN	5	
GND (AV)	6	
N.SW 5V	7	
GND (AV)	8	
GND (AV)	9	
GND (AV)	10	
OSD VIDEO OUT	11	A12
AV2 PB (H)	12	A13
PROJECT 50	13	A14
S-VHS SW (L)	14	

PS3904 — TO HI-FI AUDIO SECTION(FP9304(E-1))
AV3 C IN	1	B2
PS 12V	2	B3
AV3 VIDEO IN	3	B4
SLEEP (H)	4	
TUNER VIDEO IN	5	
GND (AV)	6	
OSD IIC DATA	7	
OSD IIC CLOCK	8	
GND (AV)	9	
VV C OUT	10	A15
GND (AV)	11	
VV Y OUT	12	A16
PS 5V	13	
Y/C C OUT	14	A17
EE (H)	15	A18
PROG (H)	16	B5

PS3903 — TO HI-FI AUDIO SECTION(FP9303(E-1))
LANC	1	B6
PS 5V	2	
GND (SYS)	3	
5P CLOCK	4	B7
5P DATA	5	B8
GND (SYS)	6	

PS3901 — TO HI-FI AUDIO SECTION(FP9301(G-1))
GND (AV)	1	
GND (AV)	2	
GND (AV)	3	

AV OUT — JK3902 VJJ0416
1	AUDIO OUT (R)
2	
3	
4	AUDIO OUT (L)
5	
6	VIDEO OUT
7	

AV1 — JK3906 VJS1470 (TV)
1	AUDIO OUT CH2 (R)
2	AUDIO IN CH2 (R)
3	AUDIO OUT CH1 (L)
4	GND (A)
5	GND (BLUE)
6	AUDIO IN CH1 (L)
7	BLUE
8	PB +12V
9	GND (GREEN)
10	-/CONTROL
11	GREEN
12	-/DATA
13	GND (RED)
14	GND (BLANK)
15	RED/C OUT
16	BLANKING
17	GND (V OUT)
18	GND (V IN)
19	VIDEO OUT/Y OUT
20	VIDEO IN
21	GND

S-VIDEO OUT — JK3904 VJJ0574

AV2 — JK3905 VJS1470 (DECODER/EXT)
1	AUDIO OUT CH2 (R)
2	AUDIO IN CH2 (R)
3	AUDIO OUT CH1 (L)
4	GND (A)
5	GND (BLUE)
6	AUDIO IN CH1 (L)
7	BLUE
8	AV2 +12V
9	GND (GREEN)
10	-/CONTROL
11	GREEN
12	-/DATA
13	GND (RED)
14	GND (BLANK)
15	RED/C IN
16	BLANKING
17	GND (V OUT)
18	GND (V IN)
19	VIDEO OUT
20	VIDEO IN/Y IN
21	GND

LANC — JK3907 VJJ0169
JK3908 K2HZ105A0002

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)

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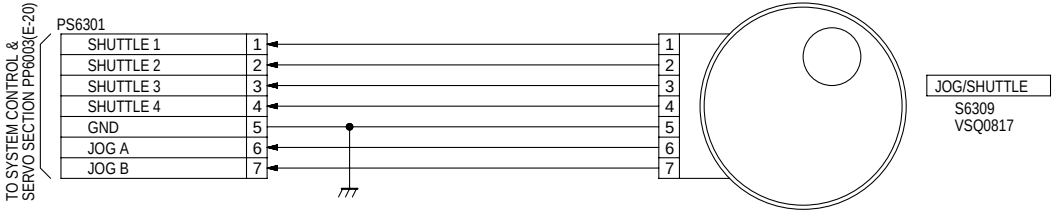
NV-HS870EG/B/EC
INPUT/OUTPUT PACK SCHEMATIC DIAGRAM



A

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
JOG SCHEMATIC DIAGRAM

1 2 3 4

AUDIO SIGNAL PATH

L7302 1u
C7302 6V100
X7302 VSX0953
C7316 0.1
R7327 8200
R7325 0

TEST1 (22) 3.3
VDDA2 (21)
VSSA2 (20)
VDDR2 (19) 2.0
1 REF (18)
TEST2 (17)
TP3 (16) 1.6
XTAL I (15) 1.6
XTAL O (14)
ADDR1 (13) 0.4
PCLK (12)

SIF2 (23) 2.0
VREF1 (24) 2.0
SIF1 (25) 2.0
CRESET (26) 4.9
VSSA3 (27)
VDDA3 (28) 4.9
SCL (29) 4.8
SDA (30) 4.6
SDO (31) 1.2
WS (32) 1.2
SCK (33) 1.2

INPUT SWITCH AGC, ADC
FM/AM DEMODULATION
IDENTIFI-CATION
IIC BUS INTERFACE
IIC BUS INTERFACE
NICAM DEMODULATION
DEMATRIX
NICAM DECODER
2 CHANNEL ANALOG/ SATELLITE DECODER
DIGITAL SELECTOR
LEVEL ADJUST
POST FILTER 3 DACS
2 CHANNEL OUTPUT BUFFERS
ANALOG CROSSBAR SWITCH
MONO CHANNEL OUTPUT BUFFERS

TP1 (11)
NICAM (10) 0.4
TP2 (9)
VDEC2 (8) 0
VSSD2 (7)
VDDD1 (6) 4.8
VSSD1 (5)
VSSA1 (4)
VDDA1 (3) 4.9
OUT R (2) 2.5
OUT L (1) 2.5

SYS CLK (34) 1.2
VDDD3 (35) 4.8
VSSD3 (36)
P1 (37) 4.9
MONO IN (38) 2.4
EXTIR (39) 2.4
EXTIL (40) 2.4
VREF2 (41) 2.4
P2 (42) 4.9
OUT M (43) 2.5
VSSA4 (44)

IC7301
TDA9874AH

LB7301 0
C7325 0.1
C7324 0.1

R7316 10K
LB7303 0
C7313 0.1
C7318 6V47
R7324 220
C7317 16V10
R7328 220
C7319 16V10
R7329 220
C7320 16V10

TL7301
TL7303
TL7304

PK7301
TO POWER SUPPLY/RF SECTION PK7301 (C-10)
QPSK/SIF 1
GND 2
TUNER AUDIO (N) 3
4
5
6
TUNER 5V 7

C7307 0.01
R7302 0
C7311 0
L7301 0

IC7302
PST7043
(RESET)
IN (1) 4.9
GND (2)
OUT (3) 4.9

C7308 50V2.2
C7312 0.1
R7305 100
R7306 100
C7305 33P
C7306 33P

PK7302
TO POWER SUPPLY/RF SECTION PK7302 (B-10)
OSD IIC CLOCK 1 4.8
OSD IIC DATA 2 4.6
3
TUNER AUDIO (R) 4 0
GND 5
TUNER AUDIO (L) 6 0

FL7301
VLF0633

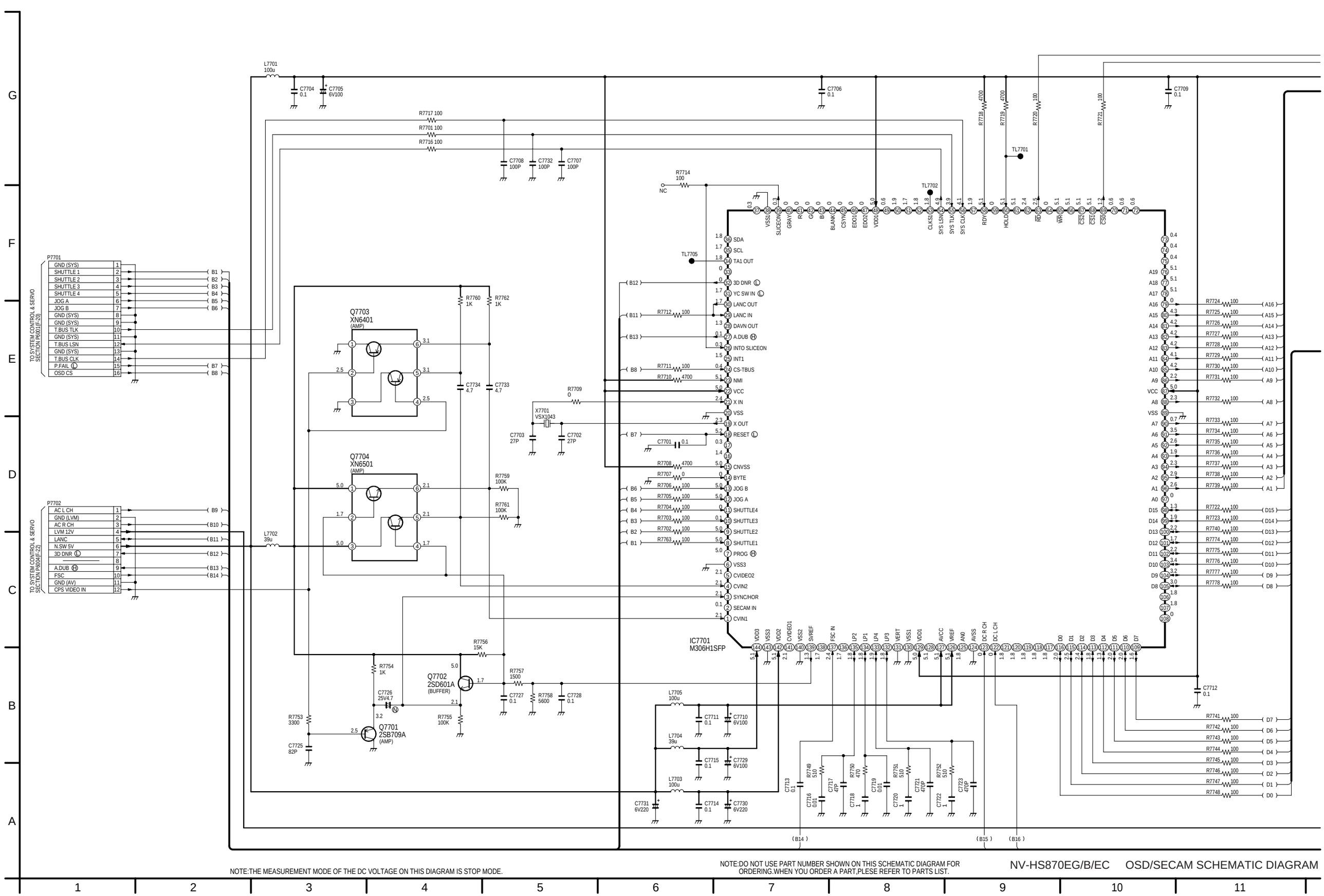
C7304 6V100
C7301 0.01
(EC)
C7303 0.01
(B)
C7341 4700P
C7342 4700P

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870B/EC
NICAM DECODER PACK SCHEMATIC DIAGRAM

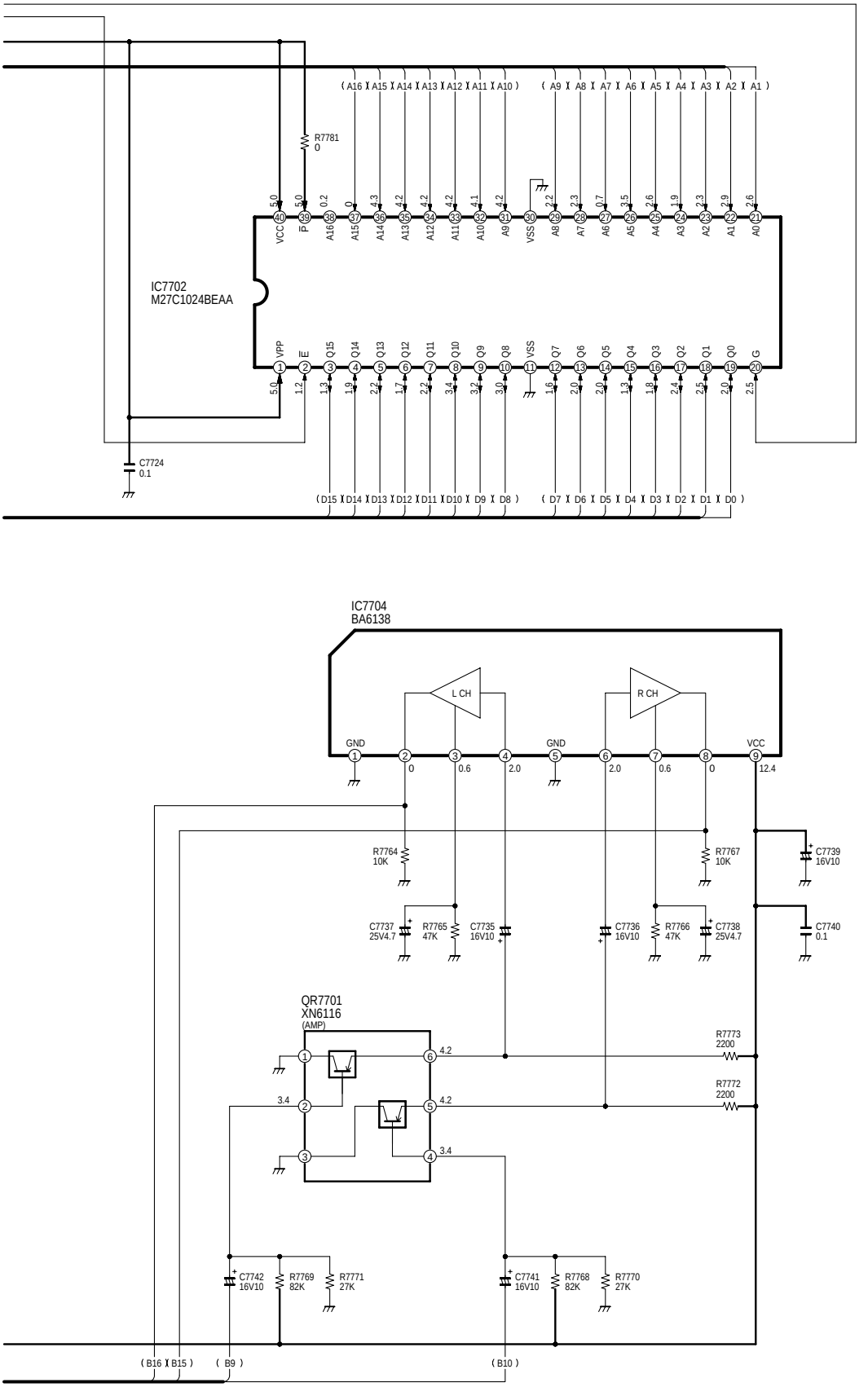
F E D C B A
1 2 3 4 5 6 7 8



NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLESE REFER TO PARTS LIST.

NV-HS870EG/B/EC OSD/SECAM SCHEMATIC DIAGRAM



NV-HS870EG/B/EC OSD/SECAM SCHEMATIC DIAGRAM

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

HOT

Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓣ :TO TIMER SECTION

P1101 VJS4283 AC INLET
F1101 VSF0243C16
L1101 ELF15N003A
L1102 ELF15N003A
LB1101 VLP0056
C1102 1000P
C1101 0.068
D1103 S1WBA80-4062
LB1104 VLP0056
C1105 400V68
R1102 1M
R1103 1M
LB1105 VLP0056
T1101 G4D2A0000073
P2
P1
B2
B1
S7
S6
S5
S4B
S4A
S2
S3
S1
HEATER DC(-)
HEATER DC(+)
UNREG -29V
UNREG 14.5V
UNREG 6V
UNREG 5.6V
UNREG 36V
GND
TO BOTTOM PLATE
D1209 MA185
D1208 MA185
IP1201 VSF0015A04T
C1206 10V100
C1205 50V56
D1202 11EQS10
D1203 11EQS10
L1201 22u
C1203 25V820
C1209 25V100
R1206 33K
R1207 39K
D1211 AK04V2
D1212 AK04V2
L1103 22u
C1210 10V1200
C1211 10V330
D1206 AK04V2
D1207 AK04V2
L1202 22u
C1204 10V1200
C1208 10V330
D1201 MA185
C1202 50V56
D1107 MA7510
D1213 0
C1112 1000P
LB1103 VLP0056
Q1101 2SK2876 (VOLTAGE CONTROL)
R1104 1K
R1105 100
C1107 270P
C1201 3300P
LB1210 VLP0056
LR1101 VLP0392
Q1102 FS4KM-12A-AS (VOLTAGE CONTROL)
C1108 0.022
R1106 330
R1110 100K
D1108 11ES1
R1107 100
Q1103 2SC3311A (VOLTAGE CONTROL)
R1108 0.51 (1W)
Q1104 2SD1992A (VOLTAGE CONTROL)
R1109 1800
D1104 MA4027L
D1106 MA185
C1109 0.047
D1105 MA165
C1110 0.1
R1112 3.3
R1111 330
R1113 33
C1111 0.01
Q1201 PC123ZY2
IC1201 uPC1093J
R1202 270
R1201 2200
C1207 0.1
R1204 12K
R1203 27K
R1208 8200
R1209 56K
R1205 2200

NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE..... ⏚
SECONDARY SIDE... ⏚
NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-HS870EG/B/EC
POWER TRANSFORMER SECTION IN MAIN SCHEMATIC DIAGRAM

Ⓟ :TO POWER TRANSFORMER SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓣ :TO TIMER SECTION

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

Q1001 2SD602A (BUFFER)
QR1002 UN2212 (FIP ON/OFF CONTROL)
QR1003 UN2112 (FIP Ⓛ:ON)
Q1011 2SD1996 (12V REG)
QR1006 UN2212 (POWER OFF Ⓗ:ON)
Q1003 2SB710A (POWER SAVE:OFF)
Q1008 2SD1996 (5V REG)
Q1009 2SD1996 (5V REG)
Q1010 2SD1996 (5V REG)
Q1005 2SD1996 (12V REG)
Q1004 2SD601A (VOLTAGE CONTROL)
IC1001 UPC1093J
Q1007 2SD602A (5V REG)
Q1002 2SD1996 (5V REG)
Q1006 2SD1996 (5V REG)
Q1001 2SD602A (BUFFER)
QR7601 UN2211 (MUTE)
Q7601 2SD601A (MUTE)
Q7652 XN6501 (MUTE)
Q7651 2SB709A (BUFFER)

TU7601
TUNER UNIT
ENG47316G1:EG/EC
ENG47317G1:B

1 N.SW 5V
2 GND
3 DATA
4 CLOCK
5 PS 5V
6 VIDEO OUT
7 AUDIO OUT
8
9 BT
10
11 CLOCK
12 DATA
13
14 TUNER 5V
15 SW1
16 BTL 30V
17 IF OUT
18 IF IN

DU7601 — TO TV DEMODULATOR PACK PK0701(D-1)

19		PK0701-1
20		PK0701-2
21		PK0701-3
22	SIF/QPSK	PK0701-4
23	AFC S-CURVE	PK0701-5
24	TUNER VIDEO	PK0701-6
25	TUNER 5V	PK0701-7
26		PK0701-8
27	GND	PK0701-9

PK7301 — TO DECODER PACK PK7301(F-1):EG/EC TO NICAM DECODER PACK PK7301(D-1):B

1	SIF/QPSK
2	GND
3	TUNER AUDIO (N)
4	
5	
6	
7	TUNER 5V

PK7302 — TO DECODER PACK PK7302(D-1):EG/EC TO NICAM DECODER PACK PK7302(C-1):B

1	OSD IIC CLOCK
2	OSD IIC DATA
3	
4	TUNER AUDIO (R)
5	GND
6	TUNER AUDIO (L)

P HEATER DC (-)
P HEATER DC (+)
T HEATER (+)
P UNREG -29V
T FIP -29V
S FIP Ⓛ
S POWER OFF Ⓗ
S POWER SAVE Ⓗ
P UNREG 36V
P UNREG 14.5V
P UNREG 5.6V
P UNREG 6V
P GND
S GND
S GND (SYS)
S GND (FG)
S GND (MOTER)
S GND (CTL)
S GND (AV)
V GND
V GND (SYS)
V GND (HA)
V GND (HA2)
A GND
A GND (SYS)
A GND (LVM)
A GND (HA2)
T GND
V DNR 5V
V VIDEO 5V
S REG 5V
S A PS 12V
S LVM 12V
S A PS 5V
V BIAS 5V
S V N.SW 5V
A T N.SW 5V
S AUDIO DEF Ⓗ
A RFC VIDEO OUT
A TUNER AUDIO (L)
A TUNER AUDIO (R)
S OSD IIC DATA
S OSD IIC CLOCK
V TUNER AUDIO (N)
A TUNER VIDEO
S AFC S-CURVE
S MAIN IIC DATA
S MAIN IIC CLOCK
A RFC AUDIO OUT

IP1002 UNH001300A
IP1003 UNH000300A
IP1004 UNH000300A
IP1005 UNH000300A
IP1006 UNH000300A
IP1001 UNH000300A

D1004 0
D1001 MA165
D1002 MA4051NH
D1003 MA4051NL
D1005 MA4051NM
D1006 MA165
D1007 MA4130NL
D7601 MA4300M
D7602 MA165
D7603 MA165

L7601 33u
L7602 33u
L7603 33u
L7604 2.2u
L7605 0
L7607 22u
L7651 10u
LB7603 0
LB7602 0

C1024 0.01
C1022 16V100
C1021 16V22
C7619 0.01
C1025 0.1
C1014 16V100
C1018 0.1
C1019 0.1
C1013 16V100
C1020 0.1
C1023 16V100
C1008 0.01
C1005 50V10
C1016 25V47
C1004 16V47
C1007 1000P
C1012 50V10
C1009 0.01
C1010 50V10
C1003 0.01
C1001 25V47
C1002 50V22
C1011 25V47
C7620 0.01
C7601 6V100
C7603 220P
C7602 6V100
C7604 0.01
C7617 50V4.7
C7610 33P
C7614 10P
C7609 2200P
C7612 6V100
C7613 0.01
C7611 33P
C7605 50V10
C7606 0.1
C1006 50V4.7
C7608 0.1

R1003 56K
R1004 56K
C1026 0.1
R1005 5600
R1006 10K
R1007 10K
R1023 12K
R1001 68K
R1002 68K
R1014 4700
R1016 10K
R1024 12K
R1025 12K
R1015 6800
R1013 1500
R1010 1K
R1012 6200
R1011 5600
R1022 560
R1021 2700
R1018 2700
R1019 56K
R1009 560
R1008 1K
R7606 330
R7605 330
R7602 100
R7603 100
R7610 100
R7609 100
R7601 1K
R7612 150
R7608 150
R7613 560
R7614 10K
R7615 0
R7616 0
R7651 1800
R7652 100K
R7653 150K
R7654 150K

A1 A2 A3 A4 A5 A6 A7 A8 A9 A11 A12 A13

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WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC POWER SUPPLY/RF SECTION IN MAIN SCHEMATIC DIAGRAM

G F E D C B A
1 2 3 4 5 6 7 8 9 10

Ⓟ :TO POWER TRANSFORMER SECTION
Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓥ :TO LUMINANCE & CHROMINANCE/AUDIO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION
Ⓣ :TO TIMER SECTION

CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP

(T) IR (A21)
(V) NAVI DATA (A20)
(V) NAVI (H) (A19)
(A) PROG (H) (A18)
(V) OSD PULSE (A17)

(A) 5P CLOCK (A14)
(A) 5P DATA (A13)
(T) SAFETY TAB (L) (A12)
(R)(V)(A) MAIN IIC CLOCK (A11)
(R)(V)(A) MAIN IIC DATA (A10)
(V) CNR OFF (H) (A9)
(V) CYL HEAD (-) (A8)
(V) CYL HEAD (+) (A7)
(V) FREQ. ADJ. (A6)
(A) 60Hz PB (H) (A5)
(V) PAL EP (H) (A4)
(V) LP (H) (A3)
(A) AV2 PB (H) (A2)
(A) RFC MUTE (H) (A1)

(V) TRACKING ENV.

(R) AFC S-CURVE

(R) N.SW 5V
(R) REG 5V
(R) PS 5V
(R) PS 12V
(R) GND
(R) GND (SYS)
(R) GND (FG)
(R) GND (MOTOR)
(R) GND (CYL)
(R) GND (AV)

(A) S-VHS SW (L)

MODE SW S1501 K0G934A-00002 (B1)(B2)(B3)

(A) ABS NORMAL (H) (B4)
(V) NORMAL (L) (B5)
(V) S-VHS (H) (B6)

(A) D.FM REC (H) (B8)
(V) ART V/H/N (B9)
(A) AV3 S-VHS IN (L) (B10)
(T) ET REC (H) (B11)
(A) A.HEAD SW (B12)
(R) AUDIO DEF (H) (B13)

(V) HEAD SW (B15)
(V) V.EE (L) (B16)
(V) D.A.REC (H) (B17)
(V) BIAS (L) (B18)
(V)(A) MUTE (H) (B19)
(V) FULL ERASE (H) (B20)
(T) POWER KEY (B21)
(R) POWER OFF (H) (B22)
(R) FIP (L) (B23)
(T) RESET (L) (B24)
(V) SHORT DET (L) (B25)
(V)(A) OSD VIDEO OUT (B26)

(A) AV PB 12V
(T) BACK UP 5V

(A22) (A23) (A7) (A8) (A25) (A26) (A9) (A27) (A28) (A10) (A11) (A29) (A12) (A13) (A14) (A31)

QR6002 XN1212 (A.DUB (H):ON)
C6020 1
C6026 0.1
R6033 8200
L6003 220u
C6018 0.022
R6032 1K
C6019 0.1

S-VHS CASSETTE
S1502 K0L1BA000026
R1506 10K
R6045 100K

R6023 27K
C6015 16V10
R6025 43K
R6022 100
R6026 39K
C6016 0.01
TL6010
R6019 10K
R6021 27K
R6020 39K
R1501 120
C1501 0.1
Q1501 PNB2301MBV (T-PHOTO)
Q1502 PNB2301MAV (S-PHOTO)
SENSOR D1501 SIR505S
R6018 4700

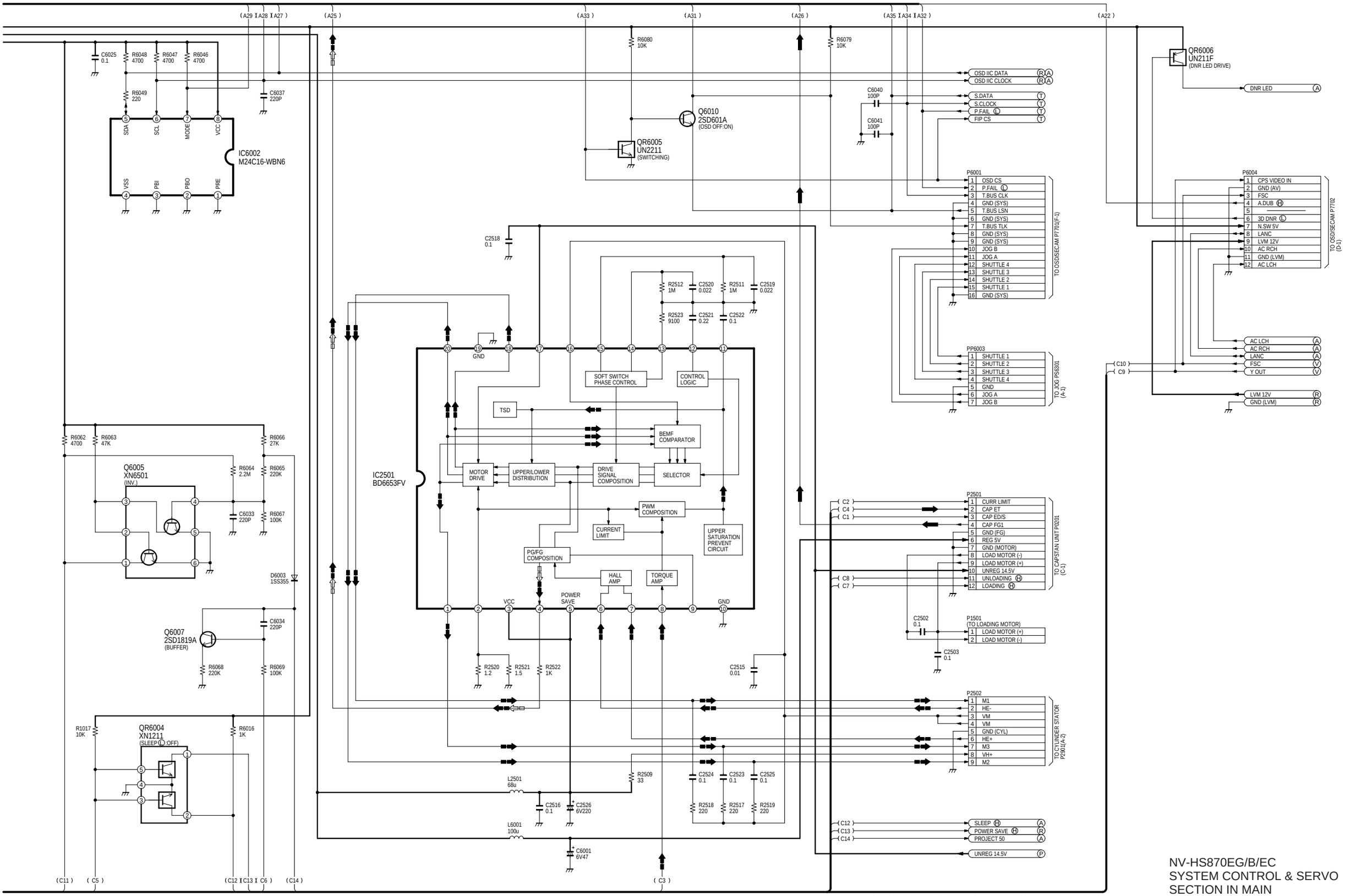
Q6008 2SD601A (AV1 PB:ON)
QR6001 UN2215 (AV1 PB (L):OFF)
R6072 22K
R6073 470K
R6071 18K
D6004 1SS355
R6074 470
R6075 22K
R6076 15K

R2507 270K
R2508 43K
C2514 0.1
C2508 0.1
C2513 3900P
TW2002
C6017 6800P
R6031 6800
C2512 25V4.7
C2511 6V22
C2509 0.47
R2505 3900
C2510 33P
R2506 1M
D2502 MA165
D2501 MA165
TW2015
R6036 470
R6035 470
R6015 470
R6014 470
R6030 4700
R6029 4700
R6024 4700
R6028 220
R6027 220
R6081 220
R6010 4700
TL6013
TL6012
R1504 27K
R1503 27K

IC1502 RP1354N (S-REEL)
IC1501 RP1354N (T-REEL)
R1502 180

IC6001 M37970VXHR

| | | |



NV-HS870EG/B/EC SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
SYSTEM CONTROL & SERVO
SECTION IN MAIN
SCHEMATIC DIAGRAM

Ⓟ :TO POWER TRANSFORMER SECTION
Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION

DP7501
A2BD00000040

VCR VHS EXT Link REC ENR S-VHS ET CH STB CVC VP EP SLP SP ON OFF REMAIN

F+ F+ P1 P2 P3 P4 P5 P6 P7 P8 NC P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 NC NC NC NC NC NC NC NC NC 1G 2G 3G 4G 5G 6G 7G NC NC F- F-
1 2 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 44 45

Ⓡ HEATER (+)
R7508 15
C7501 0.01
Ⓟ HEATER DC (-)
D7501 MN4220NM
C7502 50V10
R7511 820
R7510 820
Ⓡ FIP -29V
R7509 100

-28.4 -28.3 -29.0 -29.4 -28.3 -28.1 -28.5 -24.3 -29.0 -24.3 -24.1 -24.3 -19.0 -24.3 -24.1 -14.3 -29.4 -29.4
36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16 S17 VEE

IC7501
M35502AFP

4.9 5.0 2.4 5.2 5.2 5.2 5.2 2.3 5.2 -24.8 -24.8 -24.8 -24.8 -24.8 -24.8 -24.8 -29.4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
S DATA, S CLOCK, CS Ⓛ, A3, A2, A5, A4, VSS, OSC, VCC, G1, G2, G3, G4, G5, G6, G7, S18

R7512 0
C7503 12P

Ⓢ S.DATA
Ⓢ S.CLOCK
Ⓢ FIP CS
Ⓢ SAFETY TAB Ⓛ
SAFETY TAB
S7507 VES0834
Ⓐ POWER SW
Ⓢ POWER KEY
R7521 22K
Ⓢ IR
Ⓡ N.SW 5V
Ⓡ GND

IC7502
PNA4611M08V
(IR RECEIVER)
R OUT, GND, VCC
5.2 5.2

R7533 22K
R7517 10K
R7518 10K
R7513 30K
R7515 30K
R7516 30K
R7514 30K

IC7504
S80743AL
(RESET)
RST, VDD, VSS
5.2 5.2

IC7503
RN5VD28AA
(RESET)
OUT, VDD, GND, CD
4.9 4.9 4.4 0

C7504 6V100
C7510 0.01
R7535 10K
C7509 0.068
C7511 0.1
D7503 RB441PT-77
R7534 180
C7507 VCE0073
C7508 6V220

Ⓢ P.FAIL Ⓛ
Ⓢ RESET Ⓛ
Ⓢ BACK UP 5V
Ⓐ DNR SW
Ⓐ EJECT SW

CH UP S7504 EVQ11404M R7506 4300
STOP S7503 EVQ11404M R7505 5600
R7504 8200
R7537 12K
PLAY S7512 EVQ11G07K

CH DOWN S7502 EVQ11G07K R7503 4300
REC S7501 EVQ11G07K R7502 5600
PAUSE S7515 EVQ11L07B R7501 8200
TIMER REC S7513 EVQ11L07B R7538 12K NC

EXT LINK S7508 EVQ11L07B R7519 4300
R7536 5600
A.DUB S7509 EVQ11L07B R7522 8200
INSERT S7510 EVQ11G07K R7523 12K
S-VHS S7516 EVQ11G07K

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLESE REFER TO PARTS LIST.

NV-HS870EG/B/EC
TIMER SECTION IN MAIN
SCHEMATIC DIAGRAM

F E D C B A
1 2 3 4 5 6 7 8 9

VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

PK0701

DU7601-19		1
DU7601-20		2
DU7601-21		3
DU7601-22	SIF/QPSK	4
DU7601-23	AFC S-CURVE	5
DU7601-24	TUNER VIDEO	6
DU7601-25	TUNER 5V	7
DU7601-26		8
DU7601-27	GND	9

TO POWER SUPPLY/ RF SECTION DU7601 (D-10)

R0713 0

R0740 470

C0724 220P: EG/EC 330P:B

R0717 470

R0711 180

R0745 3.3M

C0707 50V2.2

T0701 EQV5EC082P:EG/EC EQV5EC083P:B

R0729 10K

R0730 10K (EG/EC)

R0701 100K (B)

R0728 0 (B)

R0727 0

C0719 0.1

C0708 50V 0.47

C0717 33P

R0742 150

Q0702 2SD601A (AMP)

R0741 220

C0721 120P: EG/EC 82P:B

R0743 1K

IC0701 LA75503

BPF, BPF, LIM AMP, FM DET, DEEMPHP, AMP SW, EQ AMP, TRAP, S PLL, FIL CONT, LPF, VCO, FLL, AGC, AFT AMP, VIDEO DET, APC DET, 1ST SIF DET, VIF AMP, IF AGC, 1ST AMP, RF AGC

D0702 0

C0701 1

R0705 4700

R0708 10K

VR0701 10KB

R0707 39K

C0702 1000P

C0703 1

C0713 6V330

C0714 1

C0704 0.033

R0719 4700

C0712 0.1

X0704 VLF1493: EG/EC VLF1495: B

L0701 0.18u:EG/EC 0.22u:B

X0701 VLF1416:EG/EC VLF1417:B

C0710 0.01

L0703 2.2u:EG/EC 1.8u:B

R0725 100

C0715 3P: EG/EC 12P:B

C0711 16V22

R0715 22K

PP0701 (TO TUNER UNIT)

4MHz	1
AGC	2
IF	3
GND	4

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
TV DEMODURATOR PACK SCHEMATIC DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

Ⓡ :TO POWER SUPPLY/RF SECTION
Ⓢ :TO SYSTEM CONTROL & SERVO SECTION
Ⓐ :TO Hi-Fi AUDIO SECTION

R N SW 5V
S PAL EP (H)
S D.A REC (H)
S ET REC (H)
S MUTE (H)
A AUDIO OUT (N)
A AUDIO IN (N)
R TUNER AUDIO (N)
S TRACKING ENV.
S HEAD SW
A GND (A)
LB4005 J0JBC0000070

P5001 (TO CYLINDER UNIT)
LP/EP R 1
LP/EP COM 2
LP/EP L 3
SP R 4
SP COM 5
SP L 6
GND (HA) 7
AUDIO HEAD L 8
AUDIO HEAD COM 9
AUDIO HEAD R 10

A AUDIO HEAD R
A AUDIO HEAD COM
A AUDIO HEAD L
S BIAS (L)

P4002 (TO A/C HEAD)
AUDIO ERASE IN 1
GND (NA) 2
A.HEAD (R) 3
A.HEAD (W) 4
CTL HEAD (-) 5
CTL HEAD (+) 6

S CTL HEAD (+)
S CTL HEAD (-)
S SHORT DET (L)
S FULL ERASE (H)
S V.EE (L)

P4003 (TO FULL ERASE HEAD)
FULL ERASE GND 1
FULL ERASE IN 2

R BIAS 5V
S S-VHS (H)
R GND
R GND (HA)
R GND (HA2)
R GND (SYS)
A EE (H)
S LP (H)

R4081 7500
C4018 220P
T4002 EQQ7QF026P
C4019 0.15
C4021 4700P
R4082 3300
Q4002 2SD602A (OSC)
L4002 68u
C4020 10V47
C4022 0.022
Q4001 2SB710A (BIAS (L):ON)
R4087 4700
C4023 10V22
R4086 6800
R4088 4700
C4024 16V10

T4001 EQQ7QF025P
C4029 0.022
C4027 2200P
R4091 6800
Q4006 2SD602A (OSC)
C4026 0.022
L4003 68u
Q4005 2SB710A (FULL ERASE DRIVE)
C4028 6V47
R4090 4700
C4025 10V22
R4089 6800
D4001 MA165
QR4006 UN2212 (FULL ERASE (H):ON)

QR4005 UN2111 (D.A.REC (H):OFF)
QR4004 XN1215 (PAL EP (H):ON)
Q4003 2SD1149 (PB:ON)
Q4004 2SD601A (PB:ON)
R4084 4700
R4085 2200

QR3005 UN2113 (VHS:ON)
QR3003 UN2213 (VHS:ON)
R3005 3300
L3002 82u
QR3007 UN2211 (PB:ON)
QR3008 UN2113 (V.EE (L):ON)
QR3006 UN2113 (PB:ON)
R3512 1K

Q3006 2SD601A (AMP)
L3012 4.7u
R3049 2700
C3055 22P
R3050 1K
R3048 1800
R3047 0
Q3005 2SB709A (AMP)

L3019 0
L3018 0
L3017 0
R3074 0

IC3002 C1AB00001340
C3040 16V10
C3041 16V10
GND
L3009 0
R3035 100
C3043 16V10
C3044 0.1

Q3007 2SD601A (AMP)
C3058 150P
R3053 56
L3013 180u
R3051 0
R3054 0
C3057 47P
R3055 560
C3515 50V4.7

IC3503 AN6308S
C3514 4.7
R3076 0
C3517 0.1
R3023 3900

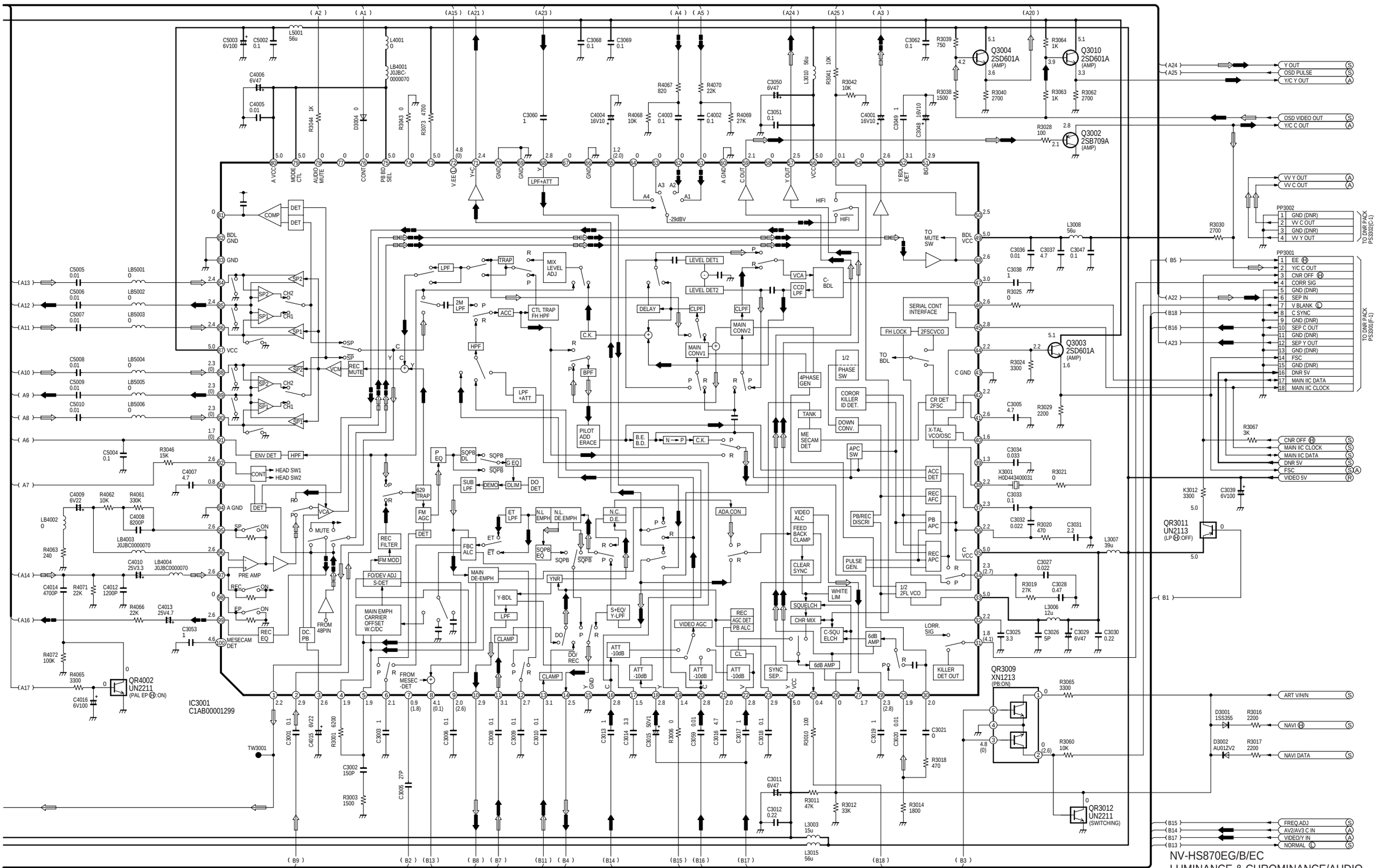
IC3502 AN6308S
C3512 4.7
C3511 4.7
R3513 390
C3509 4.7
R3022 3900
Q3502 2SB709A (AMP)
R3511 1200
R3510 390K

IC3501 AN3293S
SUB EMPHASIS
LOGIC
PB
REC
SP
LP
C3505 270P
R3506 3300
R3505 3300
C3504 270P
C3508 270P
R3509 1K
R3508 470
C3506 82P
R3507 1K
C3503 220P
R3504 1500
C3501 4.7
C3502 4.7
R3501 2200
R3503 1200
C3063 0
C3507 6V47
C3516 0.1
R3502 1500
Q3501 2SB709A (AMP)

(A1) (A2) (A3) (A4) (A5) (A6) (A7) (A8) (A9) (A10) (A11) (A12) (A13) (A14) (A15) (A16) (A17) (A20) (A21) (A22)
(B1) (B2) (B3) (B4) (B5) (B7) (B8) (B9) (B11)

NOTE:THE MEASUREMENT MODE OF THE DC VLOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)

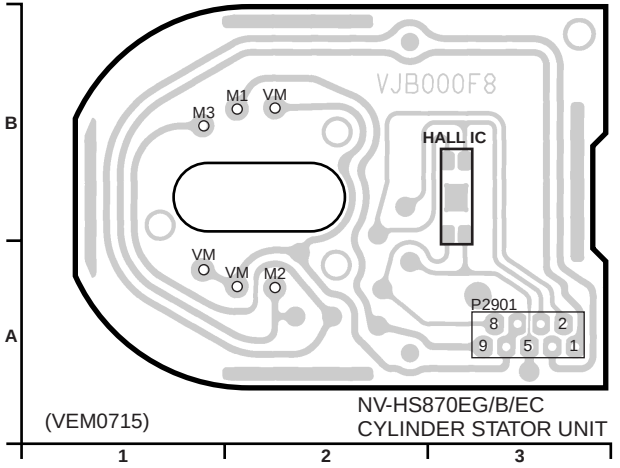
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)



NV-HS870EG/B/EC LUMINANCE & CHROMINANCE/AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
LUMINANCE & CHROMINANCE/AUDIO
SECTION IN MAIN SCHEMATIC DIAGRAM



(VEM0715)

NV-HS870EG/B/EC
CYLINDER STATOR UNIT

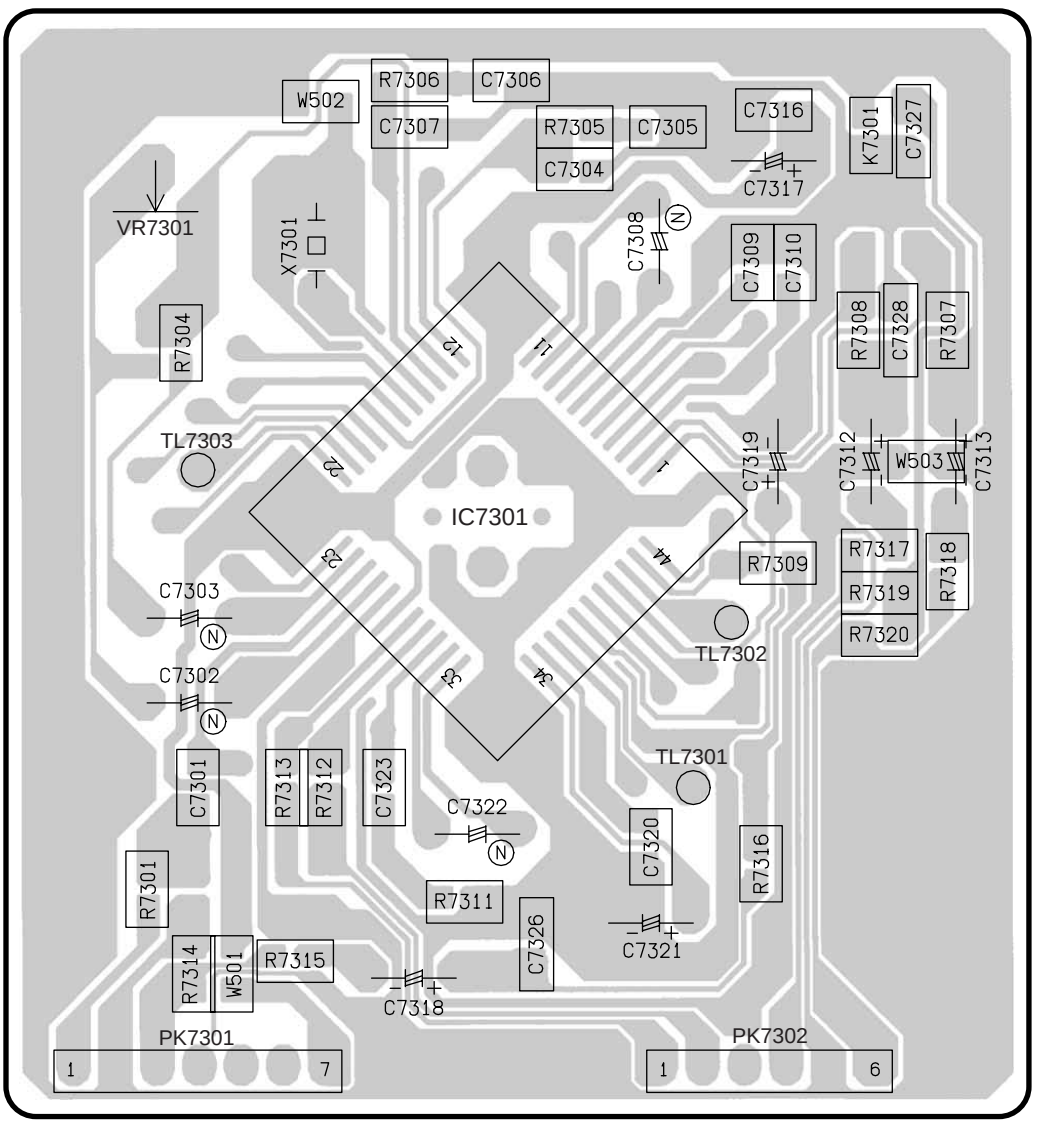
CYLINDER STATOR UNIT	
Integrated Circuit	
HALL IC	B-3
Connector	
P2901	A-3

ADDRESS INFORMATION

DECODER PACK C.B.A.	
Integrated Circuit	
IC7301	B-2
Test Point	
TL7301	A-2
TL7302	B-2
TL7303	B-1
Adjustment	
VR7301	C-1
Connector	
PK7301	A-1
PK7302	A-2

ADDRESS INFORMATION

(VEP07A16A:NV-HS870EG)

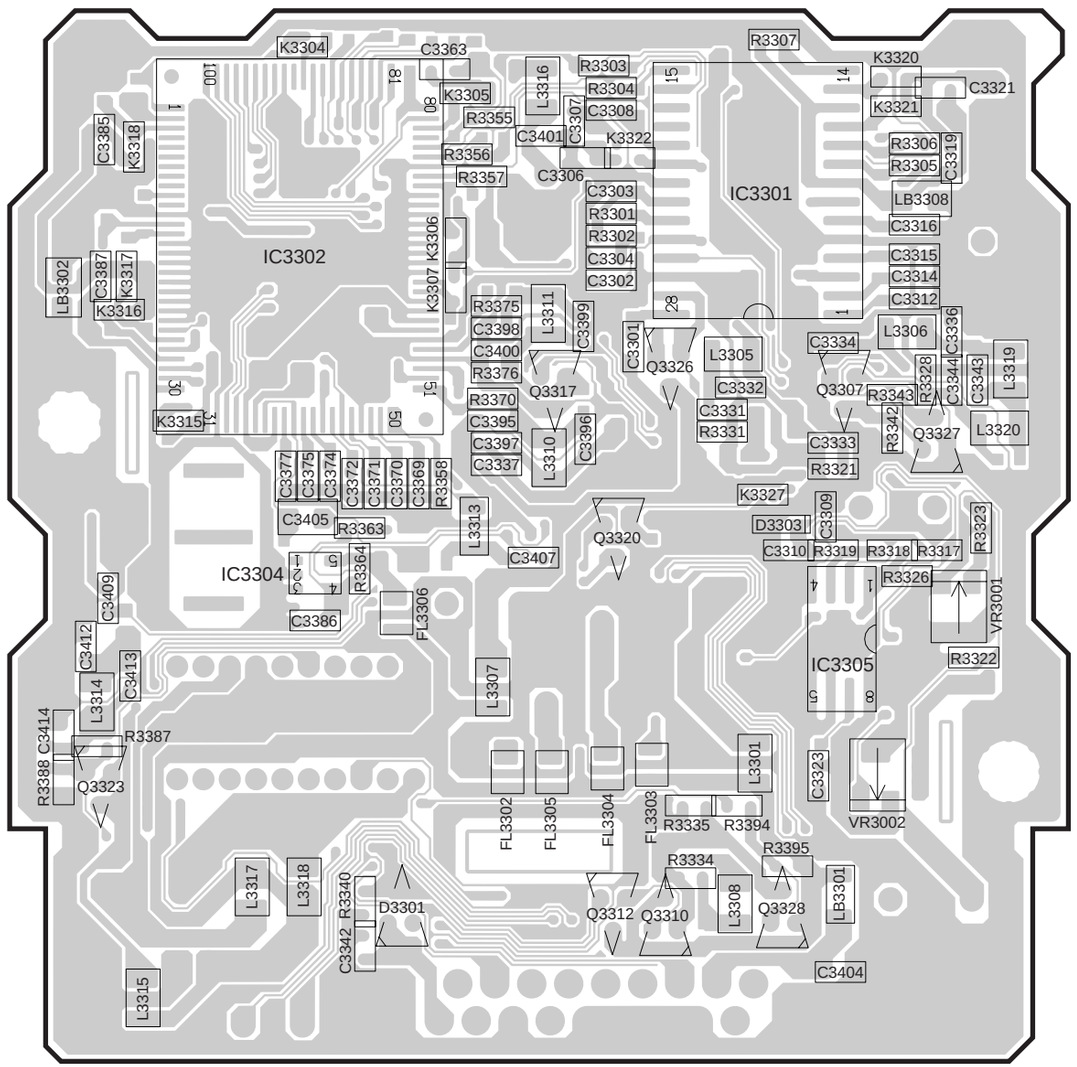


NV-HS870EG
DECODER PACK C.B.A.

DNR PACK C.B.A.			
Transistor		**Integrated Circuit**	
Q3301	D-6	IC3301	D-3
Q3302	D-6	IC3302	D-2
Q3303	D-6	IC3303	D-7
Q3305	C-6	IC3304	B-2
Q3307	C-4	IC3305	B-4
Q3310	A-3	IC3306	B-7
Q3311	A-7	IC3307	B-5
Q3312	A-3	**Test Point**	
Q3316	C-6	TL3301	C-5
Q3317	C-3	TL3302	B-7
Q3319	C-7	TL3303	B-6
Q3320	C-3	TL3304	C-5
Q3321	B-8	**Adjustment**	
Q3322	B-8	VR3001	B-4
Q3323	B-1	VR3002	B-4
Q3324	C-7	**Connector**	
Q3325	C-6	PS3301	A-6
Q3326	C-3	PS3302	A-8
Q3327	C-4		
Q3328	A-3		

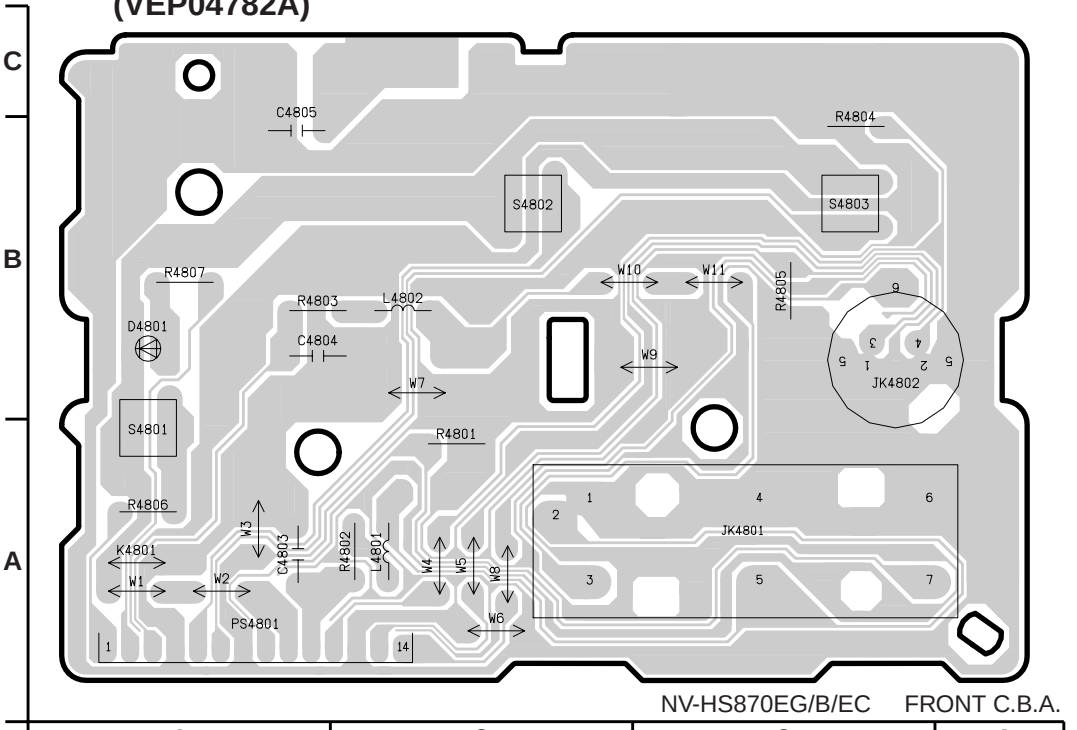
ADDRESS INFORMATION

(VEP03F76B)



(COMPONENT SIDE) **(FOIL SIDE)**

(VEP04782A)



FRONT C.B.A.	
Connector	
PS4801	A-1

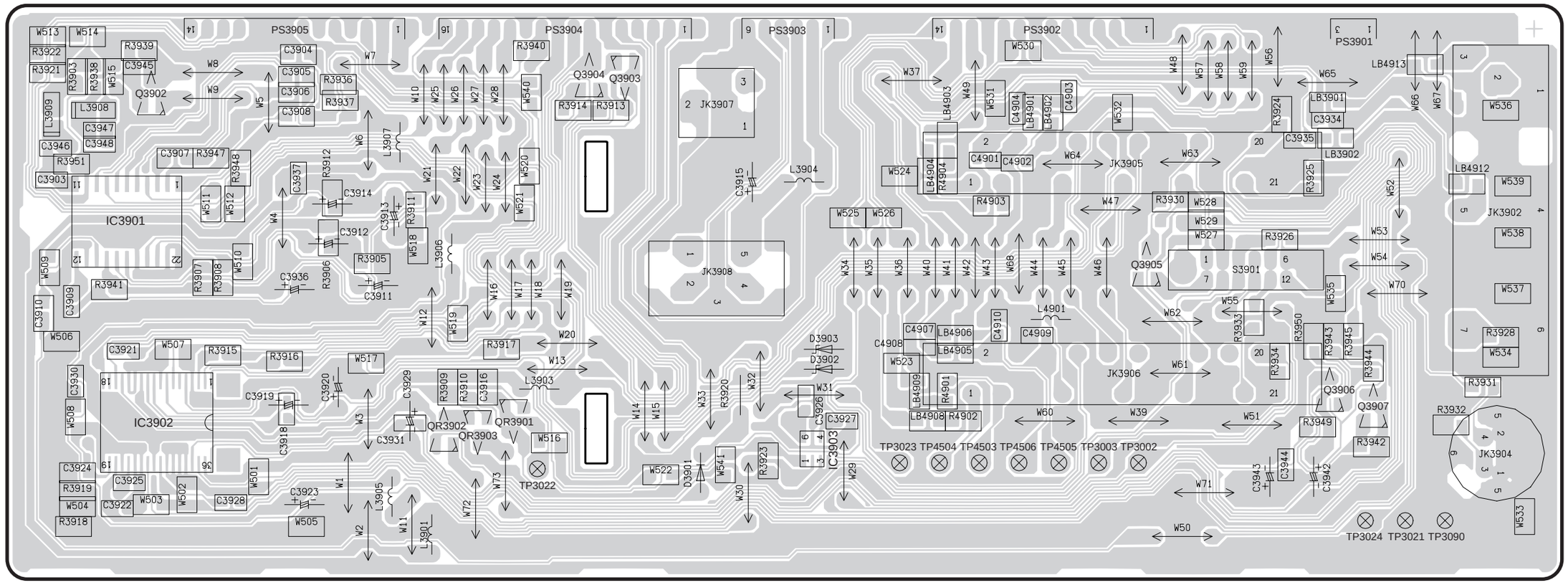
ADDRESS INFORMATION

NV-HS870EG/B/EC FRONT C.B.A.

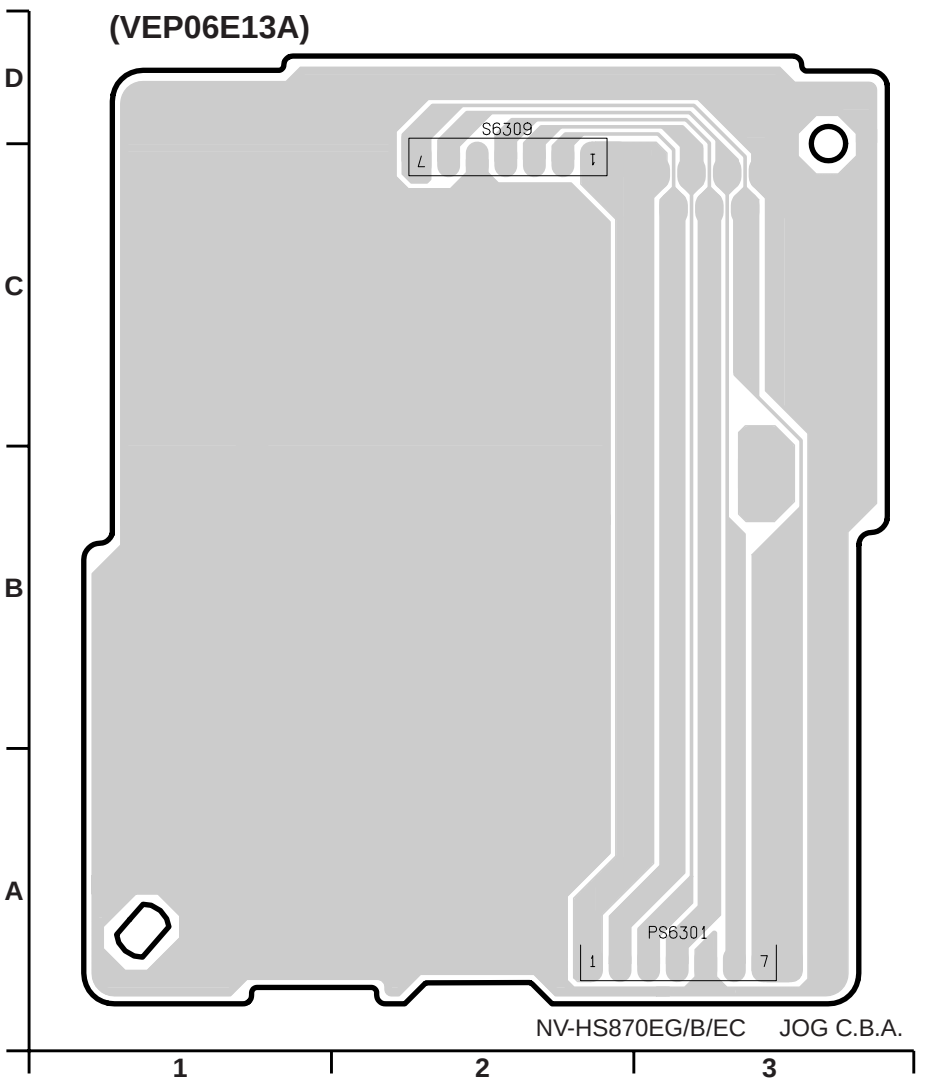
INPUT/OUTPUT PACK C.B.A.			
Transistor		TP3024	A-8
Q3902	C-1	TP3090	A-8
Q3903	C-4	TP4503	A-6
Q3904	C-4	TP4504	A-5
Q3905	B-6	TP4505	A-6
Q3906	B-7	TP4506	A-6
Q3907	B-8	**Connector**	
Transistor & Resistor		PS3901	C-7
QR3901	A-3	PS3902	C-6
QR3902	A-3	PS3903	C-5
QR3903	A-3	PS3904	C-4
Integrated Circuit		PS3905	C-2
IC3901	B-1		
IC3902	A-1		
IC3903	A-5		
Test Point			
TP3002	A-6		
TP3003	A-6		
TP3021	A-8		
TP3022	A-3		
TP3023	A-5		

ADDRESS INFORMATION

(VEP03F87C)



(VEP06E13A)

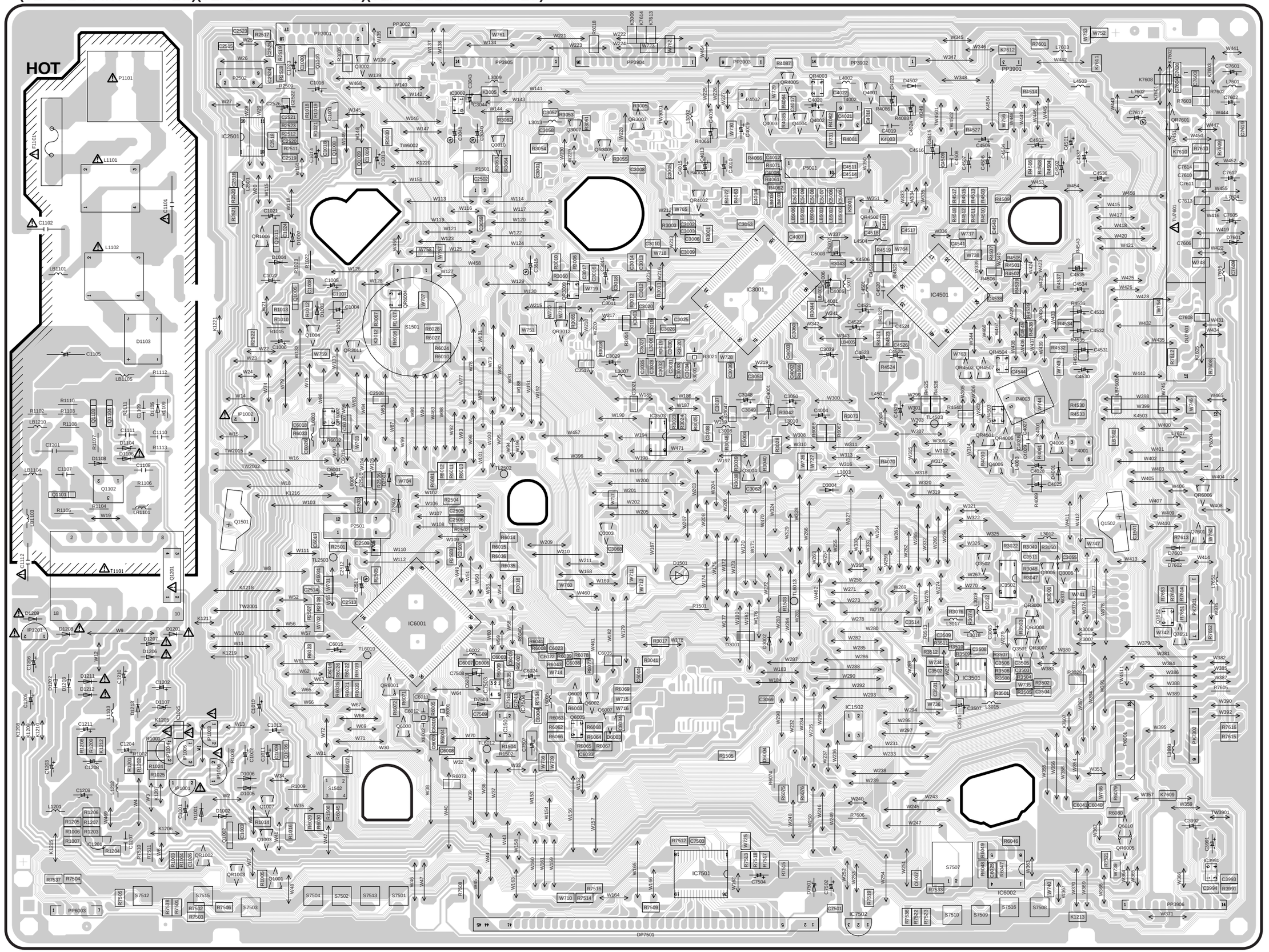


JOG C.B.A.	
Connector	
PS6301	A-3

ADDRESS INFORMATION

NV-HS870EG/B/EC JOG C.B.A.

(VEP06E08F:NV-HS870EG)(VEP06E08G:NV-HS870B)(VEP06E08H:NV-HS870EC)



NV-HS870EG/B/EC MAIN C.B.A.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

MAIN C.B.A.

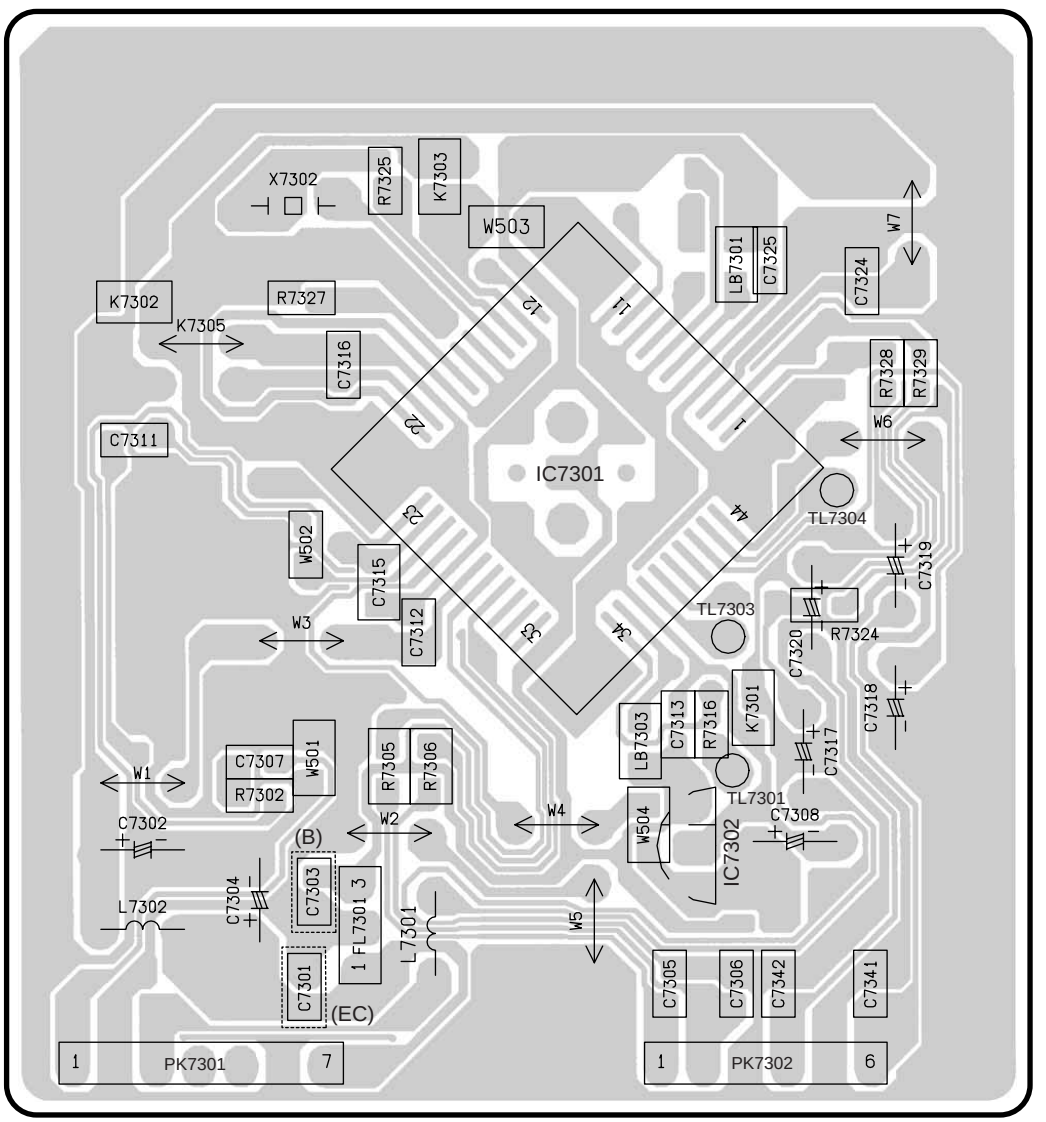
Transistor		**Transistor & Resistor**		**Test Point**	
Q1001	A-2	QR1002	A-2	TL2502	D-4
Q1002	A-2	QR1003	A-2	TL2503	C-3
Q1003	A-2	QR1006	E-2	TL4503	D-7
Q1004	E-3	QR3003	F-5	TL6010	C-3
Q1006	B-2	QR3005	F-4	TL6012	B-4
Q1007	B-2	QR3006	C-7	TL6013	C-6
Q1008	F-3	QR3007	C-7	TW2001	C-2
Q1009	F-3	QR3008	C-7	TW2002	D-2
Q1010	F-3	QR3009	E-4	TW2015	D-2
Q1011	E-3	QR3011	D-3	TW3001	F-5
Q1101	D-1	QR3012	E-4	TW6002	F-3
Q1102	D-1	QR4002	E-5	**Connector**	
Q1103	D-1	QR4003	F-6	P1101	F-1
Q1104	D-1	QR4005	F-6	P1501	F-4
Q1201	C-2	QR4006	D-7	P2501	C-3
Q1501	C-2	QR4501	D-7	P2502	F-2
Q1502	C-8	QR4502	D-7	P4002	F-5
Q3002	F-3	QR4503	D-7	P4003	D-7
Q3003	C-4	QR4504	D-7	P5001	F-6
Q3004	D-5	QR4507	D-7	P6001	B-8
Q3005	C-7	QR4508	E-6	P6004	D-8
Q3006	C-7	QR6001	B-3	PK7301	C-8
Q3007	F-4	QR6002	D-3	PK7302	B-8
Q3010	F-4	QR6004	E-3	PP3001	F-3
Q3501	C-7	QR6005	A-8	PP3002	F-3
Q3502	C-7	QR6006	D-8	PP3901	F-7
Q4001	F-6	QR7601	F-8	PP3902	F-6
Q4002	F-6	**Integrated Circuit**		PP3903	F-5
Q4003	F-5	IC1001	F-3	PP3904	F-5
Q4004	F-6	IC1201	A-1	PP3905	F-4
Q4005	D-7	IC1501	B-4	PP3906	A-8
Q4006	D-7	IC1502	B-6	PP6003	A-1
Q6002	B-4	IC2501	F-2	DU7601	E-8
Q6005	B-4	IC3001	E-5	TU7601	E-8
Q6007	B-4	IC3002	F-3		
Q6008	B-3	IC3501	B-7		
Q6009	B-4	IC3502	C-7		
Q6010	A-8	IC3503	D-5		
Q7601	C-8	IC3991	A-8		
Q7651	C-8	IC4501	E-7		
Q7652	C-8	IC6001	C-3		
		IC6002	A-7		
		IC7501	A-5		
		IC7502	A-6		
		IC7503	B-4		
		IC7504	B-4		

ADDRESS INFORMATION

NICAM DECODER PACK C.B.A.	
Integrated Circuit	
IC7301	B-2
IC7302	A-2
Test Point	
TL7301	A-2
TL7303	B-2
TL7304	B-2
Integrated Circuit	
PK7301	A-1
PK7302	A-2

ADDRESS INFORMATION

(VEP07A18A:NV-HS870B)
(VEP07A18J:NV-HS870EC)

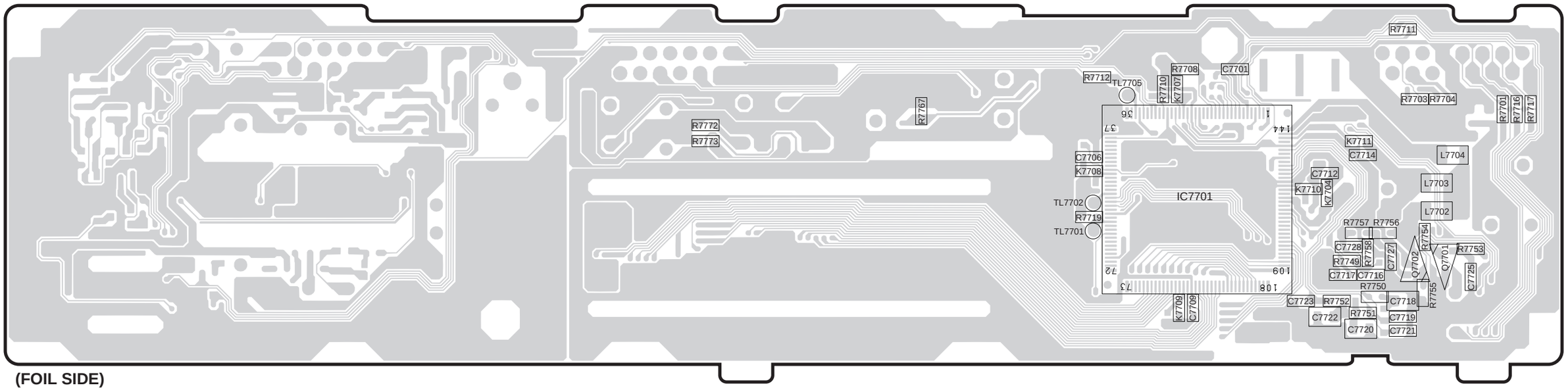


NV-HS870B/EC
NICAM DECODER PACK C.B.A.

OSD/SECAM C.B.A.			
Transistor		**Test Point**	
Q7701	D-9	TL7701	D-7
Q7702	D-8	TL7702	D-7
Q7703	B-9	TL7705	E-7
Q7704	B-8	**Connector**	
Transistor & Resistor		P7701	A-9
QR7701	B-5	P7702	A-4
Integrated Circuit			
IC7701	D-7		
IC7702	B-5		
IC7704	B-6		

ADDRESS INFORMATION

(VEP07A38B)

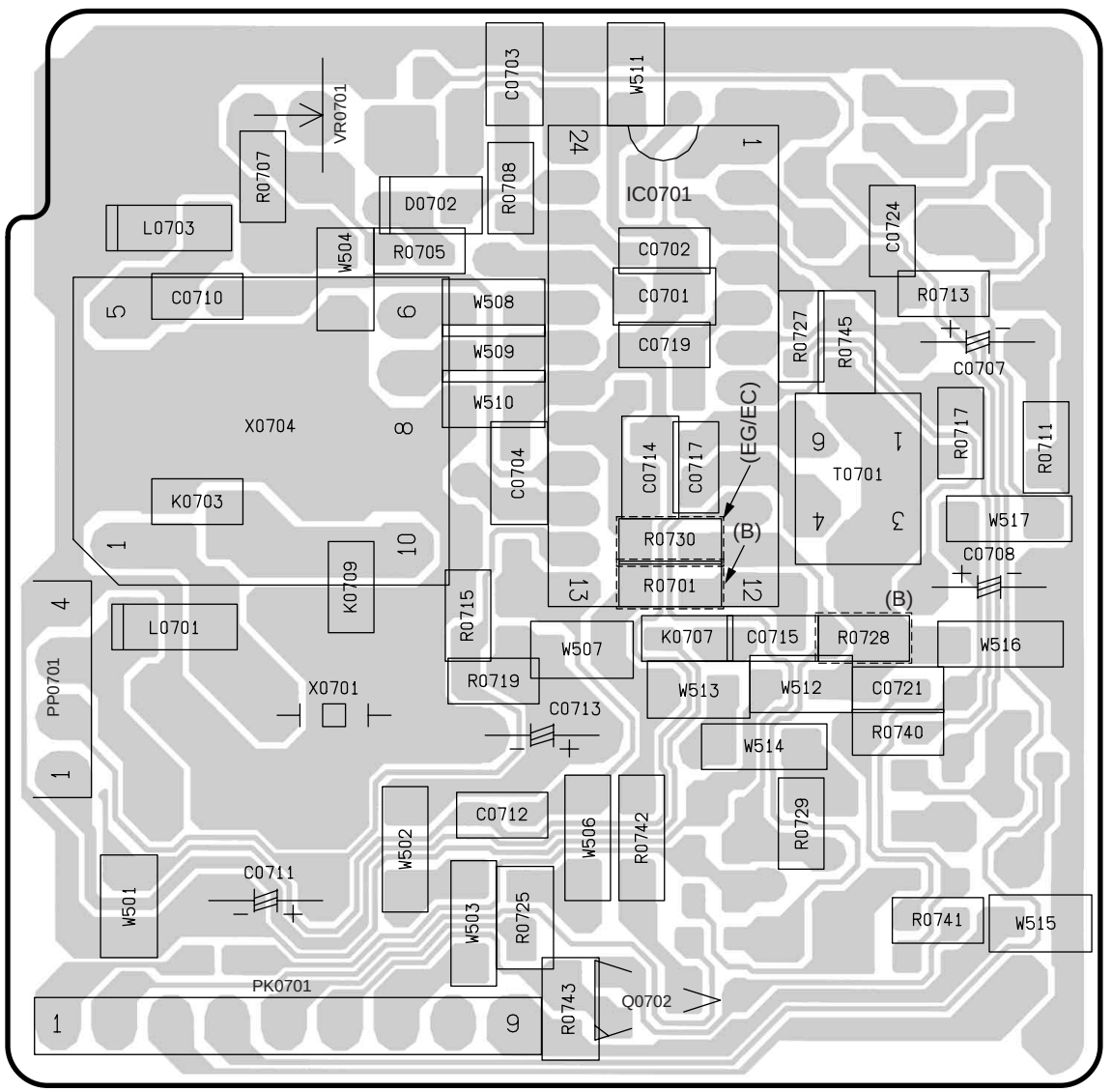


NV-HS870EG/B/EC
OSD/SECAM C.B.A.

TV DEMODULATOR PACK C.B.A.	
Transistor	
Q0702	A-3
Integrated Circuit	
IC0701	C-2
Adjustment	
T0701	B-3
VR0701	D-2
Connector	
PK0701	A-2
PP0701	B-1

ADDRESS INFORMATION

(VEP07A23L:NV-HS870EG/EC)
(VEP07A23M:NV-HS870B)



NV-HS870EG/B/EC
TV DEMODURATOR PACK C.B.A.

T1101-3 STOP
3.8Vp-p (2msec.div.)

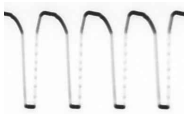
T1101-5 STOP
500Vp-p (5usec.div.)

T1101-6 STOP
540Vp-p (5usec.div.)

T1101-7 STOP
30Vp-p (5usec.div.)

T1101-10 STOP
180Vp-p (5usec.div.)

T1101-11 STOP
22Vp-p (5usec.div.)



T1101-12 STOP
22Vp-p (5usec.div.)

T1101-13 STOP
50Vp-p (5usec.div.)

T1101-16 STOP
94Vp-p (5usec.div.)

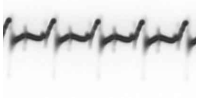
T1101-17 STOP
23Vp-p (5usec.div.)

Q1101-S STOP
500Vp-p (5usec.div.)

Q1101-G STOP
170Vp-p (5usec.div.)

Q1101-D STOP
540Vp-p (5usec.div.)

Q1102-1 STOP
15Vp-p (5usec.div.)

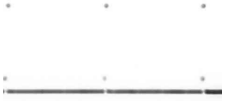


Q1102-2 STOP
1.0Vp-p (5usec.div.)

Q1102-3 STOP
500Vp-p (5usec.div.)

Q1201-1,2 STOP
0.5Vp-p (5usec.div.)

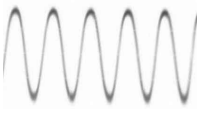
IC2501-1,18,20 PLAY
8.6Vp-p (2msec.div.)



IC6001-20 STILL
5.0Vp-p (5msec.div.)

IC6001-24 REC
5.0Vp-p (10msec.div.)

IC6001-34 REC
4.0Vp-p (5msec.div.)



IC6001-35 REC
2.4Vp-p (20usec.div.)

IC6001-61 REC
2.0Vp-p (20usec.div.)

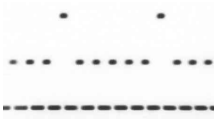
IC6001-93,94 FF/REW
5.0Vp-p (1msec.div.)

IC6001-97 REC
5.0Vp-p (5msec.div.)

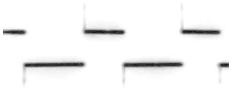
IC6001-98 REC
5.0Vp-p (5msec.div.)

IC6001-99 REC
5.0Vp-p (10msec.div.)

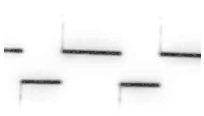
IC6001-100 REC
5.0Vp-p (10msec.div.)



IC6001-107 REC
5.0Vp-p (10msec.div.)

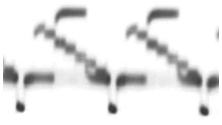


IC6001-111 REC
6.4Vp-p (10msec.div.)



IC6001-112 REC
6.4Vp-p (10msec.div.)

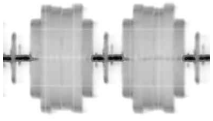
IC6001-114 PLAY
4.0Vp-p (10msec.div.)



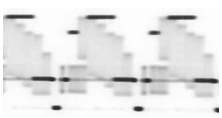
IC3001-11 REC
0.4Vp-p (20usec.div.)

IC3001-11 PLAY
0.4Vp-p (20usec.div.)

IC3001-13 REC/PLAY
0.4Vp-p (20usec.div.)

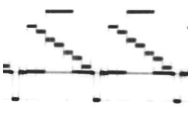


IC3001-20 REC
0.8Vp-p (20usec.div.)

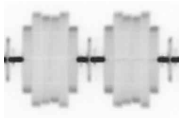


IC3001-22 REC
1.0Vp-p (20usec.div.)

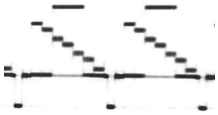
IC3001-45,46 REC/PLAY
5.0Vp-p (5msec.div.)



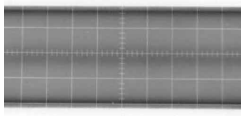
IC3001-57 REC/PLAY
2.0Vp-p (20usec.div.)



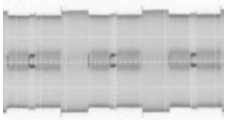
IC3001-59 REC/PLAY
1.5Vp-p (20usec.div.)



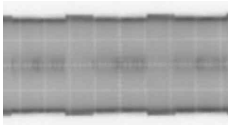
IC3001-68 REC
1.2Vp-p (20usec.div.)



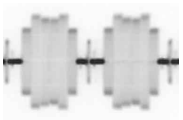
IC3001-84 PLAY
2.8Vp-p (20usec.div.)



IC3001-85 REC
3.0Vp-p (20usec.div.)



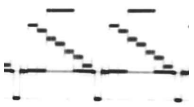
IC3001-86 PLAY
2.8Vp-p (20usec.div.)



PP3001-2 PLAY
1.2Vp-p (20usec.div.)

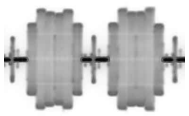
PP3001-4 REC
2.0Vp-p (5msec.div.)

PP3001-6 REC
0.6Vp-p (20usec.div.)

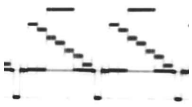


PP3001-6 PLAY
0.6Vp-p (20usec.div.)

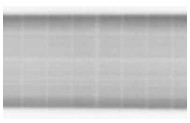
PP3001-8 REC/PLAY
5.0Vp-p (20usec.div.)



PP3001-10 REC
0.8Vp-p (20usec.div.)



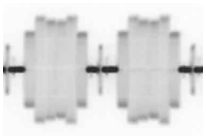
PP3001-12 REC
1.2Vp-p (20usec.div.)



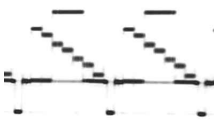
PP3001-14 REC/PLAY
0.5Vp-p (20usec.div.)

PP3001-17 REC/PLAY
5.0Vp-p (20usec.div.)

PP3001-18 REC/PLAY
5.0Vp-p (20usec.div.)



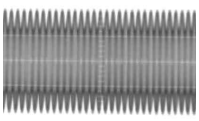
PP3002-2 PLAY
0.6Vp-p (20usec.div.)



PP3002-4 PLAY
1.0Vp-p (20usec.div.)

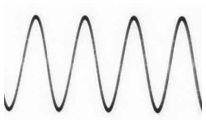
Q4002-C REC
8.4Vp-p (5usec.div.)

Q4006-C REC
8.4Vp-p (5usec.div.)



IC4501-21,22,24
REC 1.2Vp-p (10usec.div.)

IC4501-32 REC/PLAY
0.2Vp-p (0.5msec.div.)



IC4501-53,57 REC/PLAY
1.2Vp-p (0.5msec.div.)

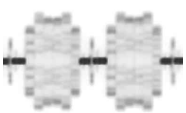
IC3301-7 REC
1.0Vp-p (20usec.div.)

IC3301-10 REC/PLAY
5.0Vp-p (20usec.div.)

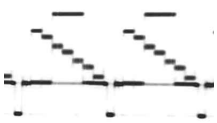
IC3301-15 REC/PLAY
5.0Vp-p (5msec.div.)

IC3301-16 REC/PLAY
5.0Vp-p (5msec.div.)

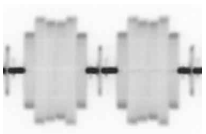
IC3301-25 REC
2.0Vp-p (20usec.div.)



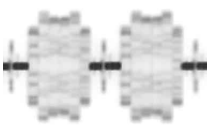
IC3301-27 REC
1.2Vp-p (20usec.div.)



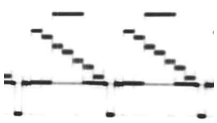
IC3302-40 PLAY
1.5Vp-p (20usec.div.)



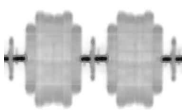
IC3302-45 PLAY
1.2Vp-p (20usec.div.)



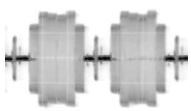
IC3302-51 PLAY
1.0Vp-p (20usec.div.)



IC3302-55 PLAY
1.2Vp-p (20usec.div.)



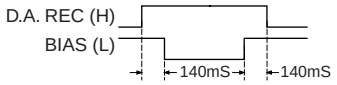
IC3306-5 PLAY
0.5Vp-p (20usec.div.)



IC3306-19 REC/PLAY
0.6Vp-p (20usec.div.)

No.	NAME	I/O	Description	P-OFF	P-SAVE	P-FAIL	Reset
1	CURRENT_LIMIT	O	Current limit terminal for Capstan driver.	Low	Low	Low	Low
2	F ADJUST	O	Analogue voltage output for Head frequency response adjustment.	Low	Low	Low	Low
3	SCAS_IN(L)	I	Detection Terminal for VHS tape or S-VHS tape.	In	In	In	In
4	PB60Hz(H)	O	Switching terminal of NTSC-PB trap filter for FM audio. (1).When the Playback detection result is 60Hz in the "VV"mode (PB,TRICK/PB,ADUB,ADUB-PS), the high (H) signal is outputted. (2).Other than above condition, the high (L) signal is outputted.	Low	Low	Low	Low
5	TRACKING_ENVE	I	Video envelope input terminal for auto tracking and CVC.	In	In	In	In
6	SLP(H)	O	Tape speed output terminal.(EE/VV) *When the NTSC10/PAL9H is set up as the Servo data.: High (h) output. *Other than above speed : Low (L) output.	Low	Low	Low	Low
7	LP(H)	O	Tape speed output terminal.(EE/VV) *When the NTSC4H/6H or PAL6H/9H is set up as the Servo data : High (H) Output. *Other than above speed : Low (L) output. *As for 2 head model, the output signal is fixed to low, no matter if it has LP mode or not.	Low	Low	Low	Low
8	CPB	I	PB(H) input terminal from AV2. *From 3.85v to 5.0v : High *From 1.82v to 2.84v :Middle *From 0v to 0.81v :Low	In	In	In	In
9	AFC S	I	S curve input terminal from the Tuner.	In	In	In	In
10	A-MUTE(H)	O	Audio mute signal exclusive for the RF converter.	High	High	Low	High
11	AV1_8IN	I	PB(H) input terminal from AV1. *From 3.85v to 5.0v : High *From 1.82v to 2.84v :Middle *From 0v to 0.81v :Low	In	In	In	In
12	N/S/T2/T3	I	Normal/Service/Test2/Test3 select *Over than 4.0v :NORMAL mode *From 2.5v to 4.0v :SERVICE mode *From 1.0v to 2.5v :TEST2 mode *From 0v to 1.0v :TEST3 mode	In	In	In	In
13	S-PHOTO	I	Tape end sensor input from supply side. *More than 2.6V: Black / Less than 2.4V : white)	In	In	In	In
14	T-PHOTO	I	Tape beginning sensor input from take up side *More than 2.6V: Black / Less than 2.4V : white)	In	In	In	In
15	ABS_NORM(H)	I	Input terminal for FM audio envelope level detection.	In	In	In	In
16	S-VHS/MES/NOR	I	Input terminal for Playback detection result. (S-VHS/MESECAM/NORMAL)	In	In	In	In
17	S-VHS(H)	O	Output terminal for S-VHS mode.	Low	Low	Low	Low
18	SECAM_ID_IN(L)	I	Input terminal for SECAM detection result.	In	In	In	In
19	D.FM.REC(H)	O	Control signal for timing of FM audio recording current.	Low	Low	Low	Low
20	ART.V/H/N	O	Output terminal of the Artificial V synchronization signal.	Low	Low	Low	Low
21	AV1_OUT_SW(L)	I	Input terminal of composite/component switching for AV1 output. *It is automatically switched composite/component when this result is sent to TV using P50.	In	In	In	In
22	AV3_S_IN(L)	I	Input terminal of AV3_S-VHS input condition. *AV3_S-VHS IN : "Low" (L).	In	In	In	In
23	ET_REC(H)	O	REC Mode output terminal of the S-VHS-ET.	Low	Low	Low	Low
24	VIDEO.H.SW	O	Output terminal for video HEAD switching signal.	Low	Low	Low	Low
25	A.H.SW	O	Output terminal for FM audio HEAD switching signal.	Low	Low	Low	Low
26	A.DEF(H)	O	Output terminal for decoder IC Reset.	Low	Low	Low	Low
27	B/W(H)	O	Output terminal for B/W Mode.	---	---	---	---
28	AVPB-H(L)	O	Output terminal of PB (H/M) for AV2. (If the unit has only one scart terminal, this is for AV1.) *To be outputted signal from 21pin (8) has been changed to H/M/L signal in accordance with the following terminal's settings.	High	High	Low	High
29	AVPB-M(H)	O		Low	Low	Low	Low
30	GND(D)		GND	---	---	---	---
31	20MHz.IN		Main oscillator input	---	STOP	STOP	---
32	20MHz.OUT	O	Main oscillator output	---	STOP	STOP	---
33	+5V(D)		VDD	---	---	---	---
34	32KHz IN		Sub oscillator input	---	---	---	---
35	32KHz OUT	O	Sub oscillator output	---	---	---	---
36	VCONT		Open	---	---	---	---

pin8 \ Setting	AVPBH-(L)	AVPBM-(H)
High	L	Hi-Z
Middle	H	Hi-Z
Low	H	L

No.	NAME	I/O	Description	P-OFF	P-SAVE	P-FAIL	Reset
37	V EE(L)	O	Output terminal of EE and VV switching.	Low	Low	Low	Low
38	D REC(H)	O	Timing control terminal for video recording current.	Low	Low	Low	Low
39	D.A.REC(H)	O	Timing control terminal for linear audio recording current.	Low	Low	Low	Low
40	BIAS(L)	O	Bias oscillation control terminal for linear audio.	High	Hi-Z	Hi-Z	High
41	FM.MUTE(H)	O	Output terminal for audio mute control.	High	High	Low	High
42	FULL ERASE(H)	O	Oscillation control terminal for FULL ERASE HEAD.	Low	Low	Low	Low
43	POWER_KEY	I	Input terminal for power on/off command through power button. (The power on/off is switched by detecting falling edge of H to L.)	In	In	In	In
44	POS.SW3	I	Input terminal for mechanism position.  	In	In	In	In
45	POS.SW2	I		In	In	In	In
46	POS.SW1	I		In	In	In	In
47	POWER OFF(H)	O	Control signal for power circuit. *High is existed when turning off the power supply for concerned circuit. *Low is existed while power is supplied to mechanism and/or concerned circuit, although it seems to be power off.	High	High	Low	High
48	FIP(L)	O	Control terminal for FIP on/off. *Low is existed when FIP OFF is selected on the Menu screen and the VCR turns off.	Not fix	High	Low	Low
49	P50 IN	I	Interrupt serial input terminal for project 50.	In	In	In	In
50	LC.OSC IN	I	Oscillation output terminal for OSD dot clock.	---	---	---	---
51	LC.OSC OUT	O	Oscillation input terminal for OSD dot clock.	---	---	---	---
52	RESET(L)		Reset input terminal of microprocessor.	In	In	In	In
53	4FC.LPF	I	4FSC input terminal.	---	---	---	---
54	OSD.FSC IN	I	FSC input tewrminal.	---	---	---	---
55	5V(OSD)		Power supply terminal for OSD circuit.	---	---	---	---
56	CVIN		Input terminal for composite video signal.	---	---	---	---
57	GND(OSD)		GND terminal for composite video signal.	---	---	---	---
58	LECHA	I	Input terminal for white level of composite video signal.	---	---	---	---
59	20M.START(H)		Control terminal for high/low-speed mode.	---	---	---	---
60	MD0		Mode switching terminal for Overwriting the Flash memory.	---	---	---	---
61	CVOUT	O	Output terminal for CG video.	---	---	---	---
62	HLF	O	LPF connecting terminal of the Slicer for OSD dot clock.	---	---	---	---
63	VHOLD	O	Capacitor connecting terminal of the Slicer for OSD dot clock.	---	---	---	---
64	CVIN(EDS)		Input terminal of the composite video signal for the Slicer.	In	In	In	In
65	SHORT_DN	I	Emergency detection terminal of oscillating circuit for recording. *The power is turned off Compulsory when this input becomes high while BIAS(L) existing The self test indication displays : F08). *The power is turned off Compulsory when this input becomes Low while BIAS(H) existing The self test indication displays : F07).	In	In	In	In
66	UNLOADING(H)	O	Control terminal for Loading motor.(Forward) *High is existed when the loading motor rotates reverse direction and/or breaking.	Low	Low	Low	Low
67	LOADING(H)	O	Control terminal for Loading motor.(Reverse) *High is existed when the loading motor rotates forward direction and/or breaking.	Low	Low	Low	Low
68	NC	O	Being Fixed to low.	Low	Low	Low	Low
69	SECAM/PAL(SYS2)	O	Output terminal for the unit recognition result of broad cast system.	Low	Low	Low	Low
70	PAL-I/BG/DK(SYS4)	O	Output terminal for broad cast system to control the video circuit.	Not fix	Low	Low	Low
71	OSD PULSE	O	Terminal for abstracting the BOX from Video signal in superimpose mode.	Low	Low	Low	Low
72	SLEEP(L)	O	Output terminal of control signal for super power save mode, to be supplied to power circuit. *Low is existed when the super power save ON is selected and the unit is in the P-OFF	High	Low	Low	High
73	PROG ON	O	I/O control to switch IIC bus for LW-programmer. H:IIC bus is connected to AV2. L:IIC bus is not connected to AV2.	Low	Low	Low	Low
74	NAVI(H)	O	NAVI data writing control signal in Vertical Branking Period.	Low	Low	Low	Low
75	NAVI DATA	O	NAVI data writing control signal in Vertical Branking Period.	Low	Low	Low	Low
76	P FAIL	I	Interrupt input terminal for power fail detection.	In	In	In	In
77	IR	I	Interrupt input terminal receiving from IR-Remote Controller.	In	In	In	In
78	P50 OUT	O	Data output terminal for Project 50 (Q-Link, etc.)	Not fix	Low	Low	Low
79	CAP.ET	O	Output terminal for Capstan Torque command.	0V	0V	Low	0V
80	CYL.ET	O	Output terminal for Cylinder Torque command.	4.213V	4.213V	Low	4.213V
81	MESECAM(L)	O	Output terminal of the MESECAM recognition.	Low	Low	Low	Low
82	HALF_WAVE(H)	O	Control terminal for switching capstan motor speed full-wave (First) and Half-wave mode.	In	In	In	In
83	CAP.R/F	O	Capstan motor rotation direction control terminal.	Low	Low	Low	Low
84	125Hz	O	Output terminal of the reference 125Hz clock using for clock adjustment.	Not fix	Low	Low	Low
85	FLD/S-BUS CS	O	FLD/Slicer bus chip select terminal.	Not fix	Low	Low	Low
86	FLD/S-BUS/T2 CLK	O	FLD / Slicer bus / Test 2 clock terminal.	Not fix	Low	Low	Low
87	FLD/S-BUS/T2 IN	I	FLD/Slicer bus / TEST2 data output terminal.	Not fix	In	In	In
88	FLD/S-BUS/T2 OUT	O	FLD/Slicer bus / TEST2 Data in terminal	Not fix	Low	Low	Low
89	5P CLK	O	FIP driver / TEST2 Serial Clock terminal (Serial clock signal for FIP driver and factory machine)	Not fix	Low	Low	Low
90	5P DATA IN	I	FIP driver / TEST2 Serial data input terminal (Serial data input signal for FIP driver and factory machine)	Not fix	In	In	In
91	5P DATA OUT	O	FIP driver / TEST2 Serial data output terminal (Serial data output signal for FIP driver and factory machine)	Not fix	Low	Low	Low

No.	NAME	I/O	Description	P-OFF	P-SAVE	P-FAIL	Reset
92	S TAB(L)	I	Input terminal of condition of the erasure prevention tab on the cassette tape. *With tab : "Low" / Without tab : "High".	In	In	In	In
93	T.REEL.PULSE	I	Input terminal for the pulse from Take-up Reel Sensor.	In	In	In	In
94	S.REEL.PULSE	I	Input terminal for the pulse from Supply Reel Sensor.	In	In	In	In
95	DAVN	I	DAVN signal from Slicer	In	In	In	In
96	EEP_WR	O	Write enable for EEPROM H:READ only L:Write	High	High	Low	High
97	MAIN IIC CLK	O	IIC clock for AV1CHIP,FM audio,Tuner,Decoder and RFC	Not fix	Low	Low	Low
98	MAIN IIC DATA	I/O	IIC data for AV1CHIP,FM audio,Tuner,Decoder and RFC	Not fix	Low	Low	Low
99	OSD IIC CLK	O	IIC clock for EEPROM,I/O and slicer	Not fix	Low	Low	Low
100	OSD IIC DATA	O	IIC data for EEPROM,I/O and slicer	Not fix	Low	Low	Low
101	CNR_OFF(H)	O	Control terminal for the Chroma Noise Reduction. *CNR ON : "High" / CNR OFF : "Low".	Low	Low	Low	Low
102	EX.FF/REW(L)	O	Control terminal for the filter of the PB-CTL signal during FF/REW.	Low	Low	Low	Low
103	FG.AMP.OUT	O	Output from internal FG Amplifier	---	---	---	---
104	FG.AMP.IN	I	Input for internal FG Amplifier	---	---	---	---
105	GND(A)	I	GND.	---	---	---	---
106	to GND	I	GND.	---	---	---	---
107	PFG	I	FPG input terminal.	---	---	---	---
108	OREF	O	Output from internal reference voltage (2.5V)	---	---	---	---
109	IREF	I	Input for internal reference voltage	---	---	---	---
110	to GND	I	GND	---	---	---	---
111	CTL.HEAD(-)	I	Input signal from CTL HEAD(+)	---	---	---	---
112	CTL.HEAD(+)	I	Input signal from CTL HEAD(-)	---	---	---	---
113	CTL.AMP.REF	I	Input for internal CTL amplifier reference voltage	---	---	---	---
114	PB.CTL.OUT	O	Output from internal CLT amplifier	---	---	---	---
115	+5V(A)	I	VDD for Analogue signal process.	---	---	---	---
116	+5V(AD)	I	VDD for A/D converter.	---	---	---	---

INPUT CONDITION							VIDEO OUTPUT RESULT							AUDIO OUTPUT RESULT				
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector
OFF	---	---	---	---	---	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
VPS STAND BY or Personal Planner Standby	EXT or TIMER1 or TIMER2	---	---	L	NO.TU	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	*[M/H]	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					C+.TU	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	*[M/H]	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					AV1	L	AV2 In	AV1 In	L	L	OFF	AV1	AV1	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	*[M/H]	L	ON	AV1	AV1	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					AV2	L	AV2 In	AV1 In	L	L	OFF	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	*[M/H]	L	ON	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					AV3	L	AV2 In	AV1 In	L	L	OFF	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	*[M/H]	L	ON	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					SAT.NO	L	AV2 In	AV1 In	L	L	OFF	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	*[M/H]	L	ON	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					SAT.C+	L	AV2 In	AV1 In	L	L	OFF	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	*[M/H]	L	ON	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				H	NO.TU	L	VCR out	AV1 In	H	H	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
						M/H	VCR out	AV1 In	H	H	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
					C+.TU	L	VCR out	AV1 In	H	H	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
						M/H	VCR out	AV1 In	H	H	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
					AV1	L	VCR out	AV1 In	H	H	OFF	AV1	AV1	Mute	Mute	Mute	AV1 In	AV1 In
						M/H	VCR out	AV1 In	H	H	OFF	AV1	AV1	Mute	Mute	Mute	AV1 In	AV1 In
					AV2	L	VCR out	AV1 In	H	H	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
						M/H	VCR out	AV1 In	H	H	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
					AV3	L	VCR out	AV1 In	H	H	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
						M/H	VCR out	AV1 In	H	H	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
					SAT.NO	L	VCR out	AV1 In	H	H	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
						M/H	VCR out	AV1 In	H	H	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
					SAT.C+	L	VCR out	AV1 In	H	H	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
						M/H	VCR out	AV1 In	H	H	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
	DECODER	---	---	L	NO.TU	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					C+.TU	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					AV1	L	AV2 In	AV1 In	L	L	OFF	AV1	AV1	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					AV2	L	AV2 In	AV1 In	L	L	OFF	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					AV3	L	AV2 In	AV1 In	L	L	OFF	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					SAT.NO	L	AV2 In	AV1 In	L	L	OFF	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					SAT.C+	L	AV2 In	AV1 In	L	L	OFF	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				H	NO.TU	L	VCR out	AV1 In	H	L	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
					C+.TU	L	VCR out	AV1 In	H	L	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
					AV1	L	VCR out	AV1 In	H	L	OFF	AV1	AV1	Mute	Mute	Mute	AV1 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
					AV2	L	VCR out	AV1 In	H	L	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
					AV3	L	VCR out	AV1 In	H	L	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
					SAT.NO	L	VCR out	AV1 In	H	L	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
					SAT.C+	L	VCR out	AV1 In	H	L	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In

INPUT CONDITION							VIDEO OUTPUT RESULT							AUDIO OUTPUT RESULT				
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector
P.ON	EXT	TV	EE	L	NO.TU	---	VCR out	VCR out	L	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
					C+.TU	---	VCR out	VCR out	L	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
	or				AV1	---	VCR out	VCR out	L	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	INSEL
					AV2	---	VCR out	VCR out	L	L	ON	AV2	AV2	AV2 In	AV2 In	AV2 In	AV2 In	INSEL
	TIMER1				AV3	---	VCR out	VCR out	L	L	OFF	AV3	AV3	AV3 In	AV3 In	AV3 In	AV3 In	INSEL
					SAT.NO	---	VCR out	VCR out	L	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
	or				SAT.C+	---	VCR out	VCR out	L	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
				H	NO.TU	---	VCR out	VCR out	H	H	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
	TIMER2				C+.TU	---	VCR out	VCR out	H	H	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
					AV1	---	VCR out	VCR out	H	H	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	INSEL
					AV2	---	VCR out	VCR out	H	H	OFF	AV2	AV2	AV2 In	AV2 In	AV2 In	AV2 In	INSEL
					AV3	---	VCR out	VCR out	H	H	OFF	AV3	AV3	AV3 In	AV3 In	AV3 In	AV3 In	INSEL
					SAT.NO	---	VCR out	VCR out	H	H	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
					SAT.C+	---	VCR out	VCR out	H	H	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
		VTR	EE	L	NO.TU	---	VCR out	VCR out	H	H	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
					C+.TU	---	VCR out	VCR out	H	H	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
					AV1	---	VCR out	VCR out	H	H	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	INSEL
					AV2	L	VCR out	VCR out	H	H	ON	AV2	AV2	AV2 In	AV2 In	AV2 In	AV2 In	INSEL
						M/H	VCR out	VCR out	M/H	M/H	ON	AV2	AV2	AV2 In	AV2 In	AV2 In	AV2 In	INSEL
					AV3	---	VCR out	VCR out	H	H	OFF	AV3	AV3	AV3 In	AV3 In	AV3 In	AV3 In	INSEL
					SAT.NO	---	VCR out	VCR out	H	H	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
					SAT.C+	---	VCR out	VCR out	H	H	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
				H	NO.TU	---	VCR out	VCR out	H	H	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
					C+.TU	---	VCR out	VCR out	H	H	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
P.ON	EXT	VTR	EE	H	AV1	---	VCR out	VCR out	H	H	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	INSEL
					AV2	---	VCR out	VCR out	H	H	OFF	AV2	AV2	AV2 In	AV2 In	AV2 In	AV2 In	INSEL
					AV3	---	VCR out	VCR out	H	H	OFF	AV3	AV3	AV3 In	AV3 In	AV3 In	AV3 In	INSEL
					SAT.NO	---	VCR out	VCR out	H	H	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
					SAT.C+	---	VCR out	VCR out	H	H	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
			VV	---	NO.TU	---	VCR out	VCR out	M/H	M/H	OFF	TUN	PB	PB	PB	PB	TUN	INSEL
					C+.TU	---	VCR out	VCR out	M/H	M/H	OFF	TUN	PB	PB	PB	PB	TUN	INSEL
					AV1	---	VCR out	VCR out	M/H	M/H	OFF	AV1	PB	PB	PB	PB	AV1 In	INSEL
					AV2	---	VCR out	VCR out	M/H	M/H	OFF	AV2	PB	PB	PB	PB	AV2 In	INSEL
					AV3	---	VCR out	VCR out	M/H	M/H	OFF	AV3	PB	PB	PB	PB	AV3 In	INSEL
					SAT.NO	---	VCR out	VCR out	M/H	M/H	OFF	SAT	PB	PB	PB	PB	SAT	INSEL
					SAT.C+	---	VCR out	VCR out	M/H	M/H	OFF	SAT	PB	PB	PB	PB	SAT	INSEL
	DECODER	TV	EE	L	NO.TU	L	VCR out	AV1 In	L	L	OFF	TUN	TUN	TUN	AV1 In	TUN	TUN	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	TUN	TUN	AV2 In	AV1 In	TUN	AV2 In	AV1 In
					C+.TU	L	VCR out	TUN IN	L	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	TUN
						M/H	VCR out	TUN IN	L	L	OFF	AV2	AV2	AV2 In	TUN	AV2 In	AV2 In	TUN
					AV1	L	VCR out	AV1 In	L	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV2	L	VCR out	AV1 In	L	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV3	L	VCR out	AV1 In	L	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	AV3	AV3	AV2 In	AV1 In	AV3 In	AV2 In	AV1 In
					SAT.NO	L	VCR out	AV1 In	L	L	OFF	SAT	SAT	SAT	AV1 In	SAT	SAT	AV1 In
						M/H	AV2 In	AV1 In	M/H	L	ON	SAT	SAT	AV2 In	AV1 In	SAT	AV2 In	AV1 In
					SAT.C+	L	VCR out	SAT IN	L	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	TUN
						M/H	VCR out	SAT IN	L	L	OFF	AV2	AV2	AV2 In	SAT	AV2 In	AV2 In	TUN
				H	NO.TU	L	VCR out	AV1 In	H	L	OFF	TUN	TUN	TUN	AV1 In	TUN	TUN	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	TUN	TUN	TUN	AV1 In	TUN	TUN	AV1 In
					C+.TU	L	VCR out	TUN IN	H	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	TUN
						M/H	VCR out	TUN IN	H	L	OFF	AV2	AV2	AV2 In	TUN	AV2 In	AV2 In	TUN
					AV1	L	VCR out	AV1 In	H	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV2	L	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV3	L	VCR out	AV1 In	H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
					SAT.NO	L	VCR out	AV1 In	H	L	OFF	SAT	SAT	SAT	AV1 In	SAT	SAT	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	SAT	SAT	SAT	AV1 In	SAT	SAT	AV1 In
					SAT.C+	L	VCR out	SAT IN	H	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	SAT
						M/H	VCR out	SAT IN	H	L	ON	AV2	AV2	AV2 In	SAT	AV2 In	AV2 In	SAT

INPUT CONDITION							VIDEO OUTPUT RESULT							AUDIO OUTPUT RESULT				
POWER	AV2 SELECT	TV/ VTR	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector
P.ON	DECODER	VTR	EE	L	NO.TU	L	VCR out	AV1 In	H	L	OFF	TUN	TUN	TUN	AV1 In	TUN	TUN	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	TUN	TUN	TUN	AV1 In	TUN	TUN	AV1 In
					C+.TU	L	VCR out	TUN IN	H	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	TUN
						M/H	VCR out	TUN IN	M/H	L	ON	AV2	AV2	AV2 In	TUN	AV2 In	AV2 In	TUN
					AV1	L	VCR out	AV1 In	H	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	AV1 In
						M/H	VCR out	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV2	L	VCR out	AV1 In	H	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
						M/H	VCR out	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV3	L	VCR out	AV1 In	H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
						M/H	VCR out	AV1 In	M/H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
					SAT.NO	L	VCR out	AV1 In	H	L	OFF	SAT	SAT	SAT	AV1 In	SAT	SAT	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	SAT	SAT	SAT	AV1 In	SAT	SAT	AV1 In
					SAT.C+	L	VCR out	SAT IN	H	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	SAT
						M/H	VCR out	SAT IN	M/H	L	ON	AV2	AV2	AV2 In	SAT	AV2 In	AV2 In	SAT
				H	NO.TU	L	VCR out	AV1 In	H	L	OFF	TUN	TUN	TUN	AV1 In	TUN	TUN	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	TUN	TUN	TUN	AV1 In	TUN	TUN	AV1 In
					C+.TU	L	VCR out	TUN IN	H	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	TUN
						M/H	VCR out	TUN IN	H	L	OFF	AV2	AV2	AV2 In	TUN	AV2 In	AV2 In	TUN
					AV1	L	VCR out	AV1 In	H	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV2	L	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					AV3	L	VCR out	AV1 In	H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
					SAT.NO	L	VCR out	AV1 In	H	L	OFF	SAT	SAT	SAT	AV1 In	SAT	SAT	AV1 In
						M/H	VCR out	AV1 In	H	L	OFF	SAT	SAT	SAT	AV1 In	SAT	SAT	AV1 In
					SAT.C+	L	VCR out	SAT IN	H	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	SAT
						M/H	VCR out	SAT IN	H	L	OFF	AV2	AV2	AV2 In	SAT	AV2 In	AV2 In	SAT
			VV	---	NO.TU	L	VCR out	AV1 In	M/H	L	OFF	TUN	PB	PB	AV1 In	PB	TUN	AV1 In
						M/H	VCR out	AV1 In	M/H	L	OFF	TUN	PB	PB	AV1 In	PB	TUN	AV1 In
					C+.TU	L	VCR out	TUN IN	M/H	L	OFF	TUN	PB	PB	TUN	PB	TUN	TUN
						M/H	VCR out	TUN IN	M/H	L	OFF	AV2	PB	PB	TUN	PB	AV2 In	TUN
					AV1	L	VCR out	AV1 In	M/H	L	OFF	AV1	PB	PB	AV1 In	PB	AV1 In	AV1 In
						M/H	VCR out	AV1 In	M/H	L	OFF	AV2	PB	PB	AV1 In	PB	AV2 In	AV1 In
					AV2	L	VCR out	AV1 In	M/H	L	OFF	AV2	PB	PB	AV1 In	PB	AV2 In	AV1 In
						M/H	VCR out	AV1 In	M/H	L	OFF	AV2	PB	PB	AV1 In	PB	AV2 In	AV1 In
					AV3	L	VCR out	AV1 In	M/H	L	OFF	AV3	PB	PB	AV1 In	PB	AV3 In	AV1 In
						M/H	VCR out	AV1 In	M/H	L	OFF	AV3	PB	PB	AV1 In	PB	AV3 In	AV1 In
					SAT.NO	L	VCR out	AV1 In	M/H	L	OFF	SAT	PB	PB	AV1 In	PB	SAT	AV1 In
						M/H	VCR out	AV1 In	M/H	L	OFF	SAT	PB	PB	AV1 In	PB	SAT	AV1 In
					SAT.C+	L	VCR out	SAT IN	M/H	L	OFF	SAT	PB	PB	SAT	PB	SAT	SAT
						M/H	VCR out	SAT IN	M/H	L	OFF	AV2	PB	PB	SAT	PB	AV2 In	SAT

NOTE: NO.TU: Tuner position, DECODER OFF (e.g. ARD) RGB SW : OFF = HIGH, ON=LOW

C+TU: Tuner position, DECODER ON (e.g. PREMI) EE : Non-Playback signal VV:Playback signal

***[M/H] :In case of Personal Planner standby(not External Link), AV1 PB must not output 'M' or 'H'**

INPUT CONDITION						VIDEO OUTPUT RESULT							AUDIO OUTPUT RESULT				
POWER	AV2 SELECT	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector
OFF	---	---	---	---	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	M/H	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
PDC STAND BY or TIMER1 or Personal Planner Standby	EXT or TIMER2	---	L	TUN	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	*[M/H]	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				AV1	L	AV2 In	AV1 In	L	L	OFF	AV1	AV1	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	*[M/H]	L	ON	AV1	AV1	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				AV2	L	AV2 In	AV1 In	L	L	OFF	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	*[M/H]	L	ON	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				AV3	L	AV2 In	AV1 In	L	L	OFF	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	*[M/H]	L	ON	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				SAT.TU	L	AV2 In	AV1 In	L	L	OFF	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	*[M/H]	L	ON	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
			H	TUN	L	VCR out	AV1 In	H	H	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
					M/H	VCR out	AV1 In	H	H	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
				AV1	L	VCR out	AV1 In	H	H	OFF	AV1	AV1	Mute	Mute	Mute	AV1 In	AV1 In
					M/H	VCR out	AV1 In	H	H	OFF	AV1	AV1	Mute	Mute	Mute	AV1 In	AV1 In
				AV2	L	VCR out	AV1 In	H	H	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
					M/H	VCR out	AV1 In	H	H	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
				AV3	L	VCR out	AV1 In	H	H	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
					M/H	VCR out	AV1 In	H	H	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
				SAT.TU	L	VCR out	AV1 In	H	H	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
					M/H	VCR out	AV1 In	H	H	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
	DECODER	---	L	TUN	L	AV2 In	AV1 In	L	L	OFF	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	M/H	L	ON	TUN	TUN	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				AV1	L	AV2 In	AV1 In	L	L	OFF	AV1	AV1	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				AV2	L	AV2 In	AV1 In	L	L	OFF	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	M/H	L	ON	AV2	AV2	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				AV3	L	AV2 In	AV1 In	L	L	OFF	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	M/H	L	ON	AV3	AV3	AV2 In	AV1 In	Mute	AV2 In	AV1 In
				SAT.TU	L	AV2 In	AV1 In	L	L	OFF	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
					M/H	AV2 In	AV1 In	M/H	L	ON	SAT	SAT	AV2 In	AV1 In	Mute	AV2 In	AV1 In
			H	TUN	L	VCR out	AV1 In	H	L	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	TUN	TUN	Mute	Mute	Mute	TUN	AV1 In
				AV1	L	VCR out	AV1 In	H	L	OFF	AV1	AV1	Mute	Mute	Mute	AV1 In	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
				AV2	L	VCR out	AV1 In	H	L	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	Mute	Mute	Mute	AV2 In	AV1 In
				AV3	L	VCR out	AV1 In	H	L	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	AV3	AV3	Mute	Mute	Mute	AV3 In	AV1 In
				SAT.TU	L	VCR out	AV1 In	H	L	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	SAT	SAT	Mute	Mute	Mute	SAT	AV1 In

INPUT CONDITION						VIDEO OUTPUT RESULT							AUDIO OUTPUT RESULT				
POWER	AV2 SELECT	EE/ VV	OSD ON(H)	INPUT CH	AV2 PB(H)	AV1 OUT	AV2 OUT	AV1 PB(H)	AV2 PB(H)	RGB SW	VCR IN	VCR OUT	AV1 Out	AV2 Out	RF (C)	AV1 Out Selector	AV2 Out Selector
P.ON	EXT	EE	L	TUN	---	VCR out	VCR out	L	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
				AV1	---	VCR out	VCR out	L	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	INSEL
	or			AV2	---	VCR out	VCR out	L	L	ON	AV2	AV2	AV2 In	AV2 In	AV2 In	AV2 In	INSEL
				AV3	---	VCR out	VCR out	L	L	OFF	AV3	AV3	AV3 In	AV3 In	AV3 In	AV3 In	INSEL
	TIMER1			SAT.TU	---	VCR out	VCR out	L	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
			H	TUN	---	VCR out	VCR out	H	H	OFF	TUN	TUN	TUN	TUN	TUN	TUN	INSEL
	or			AV1	---	VCR out	VCR out	H	H	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	INSEL
				AV2	---	VCR out	VCR out	H	H	OFF	AV2	AV2	AV2 In	AV2 In	AV2 In	AV2 In	INSEL
	TIMER2			AV3	---	VCR out	VCR out	H	H	OFF	AV3	AV3	AV3 In	AV3 In	AV3 In	AV3 In	INSEL
				SAT.TU	---	VCR out	VCR out	H	H	OFF	SAT	SAT	SAT	SAT	SAT	SAT	INSEL
		VV	---	TUN	---	VCR out	VCR out	M/H	M/H	OFF	TUN	PB	PB	PB	PB	TUN	INSEL
				AV1	---	VCR out	VCR out	M/H	M/H	OFF	AV1	PB	PB	PB	PB	AV1 In	INSEL
				AV2	---	VCR out	VCR out	M/H	M/H	OFF	AV2	PB	PB	PB	PB	AV2 In	INSEL
				AV3	---	VCR out	VCR out	M/H	M/H	OFF	AV3	PB	PB	PB	PB	AV3 In	INSEL
				SAT.TU	---	VCR out	VCR out	M/H	M/H	OFF	SAT	PB	PB	PB	PB	SAT	INSEL
	DECODER	EE	L	TUN	L	VCR out	TUN IN	L	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	TUN
					M/H	VCR out	TUN IN	L	L	ON	AV2	AV2	AV2 In	TUN	AV2 In	AV2 In	TUN
				AV1	L	VCR out	AV1 In	L	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	AV1 In
					M/H	VCR out	AV1 In	L	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
				AV2	L	VCR out	AV1 In	L	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					M/H	VCR out	AV1 In	L	L	ON	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
				AV3	L	VCR out	AV1 In	L	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
					M/H	VCR out	AV1 In	L	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
				SAT.TU	L	VCR out	SAT IN	L	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	SAT
					M/H	VCR out	SAT IN	L	L	ON	AV2	AV2	AV2 In	SAT	AV2 In	AV2 In	SAT
			H	TUN	L	VCR out	TUN IN	H	L	OFF	TUN	TUN	TUN	TUN	TUN	TUN	TUN
					M/H	VCR out	TUN IN	H	L	OFF	AV2	AV2	AV2 In	TUN	AV2 In	AV2 In	TUN
				AV1	L	VCR out	AV1 In	H	L	OFF	AV1	AV1	AV1 In	AV1 In	AV1 In	AV1 In	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
				AV2	L	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	AV2	AV2	AV2 In	AV1 In	AV2 In	AV2 In	AV1 In
				AV3	L	VCR out	AV1 In	H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
					M/H	VCR out	AV1 In	H	L	OFF	AV3	AV3	AV3 In	AV1 In	AV3 In	AV3 In	AV1 In
				SAT.TU	L	VCR out	SAT IN	H	L	OFF	SAT	SAT	SAT	SAT	SAT	SAT	SAT
					M/H	VCR out	SAT IN	H	L	ON	AV2	AV2	AV2 In	SAT	AV2 In	AV2 In	SAT
		VV	---	TUN	L	VCR out	TUN IN	M/H	L	OFF	TUN	PB	PB	TUN	PB	TUN	TUN
					M/H	VCR out	TUN IN	M/H	L	OFF	AV2	PB	PB	TUN	PB	AV2 In	TUN
				AV1	L	VCR out	AV1 In	M/H	L	OFF	AV1	PB	PB	AV1 In	PB	AV1 In	AV1 In
					M/H	VCR out	AV1 In	M/H	L	OFF	AV2	PB	PB	AV1 In	PB	AV2 In	AV1 In
				AV2	L	VCR out	AV1 In	M/H	L	OFF	AV2	PB	PB	AV1 In	PB	AV2 In	AV1 In
					M/H	VCR out	AV1 In	M/H	L	OFF	AV2	PB	PB	AV1 In	PB	AV2 In	AV1 In
				AV3	L	VCR out	AV1 In	M/H	L	OFF	AV3	PB	PB	AV1 In	PB	AV3 In	AV1 In
					M/H	VCR out	AV1 In	M/H	L	OFF	AV3	PB	PB	AV1 In	PB	AV3 In	AV1 In
				SAT.TU	L	VCR out	SAT IN	M/H	L	OFF	SAT	PB	PB	SAT	PB	SAT	SAT
					M/H	VCR out	SAT IN	M/H	L	OFF	AV2	PB	PB	SAT	PB	AV2 In	SAT

NOTE: RGB SW : OFF = HIGH, ON=LOW

EE : Non-Playback signal VV:Playback signal

***[M/H] :In case of Personal Planner standby(not External Link), AV1 PB must not output 'M' or 'H'**

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

Ref. No.	IC1501								IC1502											
MODE	1	2	3	4					1	2	3	4								
STOP	1.1	2.3	0.0	0.0					0.0	1.1	0.1	0.0								
PLAY	1.1	2.3	5.0	0.0					0.0	1.1	5.0	0.0								
REC	1.2	2.3	5.0	0.0					0.0	1.1	5.0	0.0								
F.F	1.2	2.3	2.4	0.0					0.0	1.1	2.4	0.0								
REW	1.2	2.3	2.4	0.0					0.0	1.1	2.4	0.0								

Ref. No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.7	0.0	5.1	0.0	5.1	1.2	1.1	2.7	0.0	0.0	0.0	1.8	0.2	1.6	4.3	0.7	15.5	0.7	0.0	0.7
PLAY	3.7	0.0	5.1	1.0	5.1	1.2	1.1	2.5	0.0	0.0	1.0	2.6	0.3	1.8	1.8	3.7	15.5	3.7	0.0	3.7
REC	3.8	0.0	5.1	1.0	5.1	1.2	1.2	2.5	0.0	0.0	1.0	2.6	0.3	1.8	1.8	3.7	15.5	3.8	0.0	3.8
F.F	3.6	0.0	5.1	1.0	5.1	1.2	1.1	2.5	0.0	0.0	1.1	2.6	0.4	1.8	1.8	3.7	15.5	3.7	0.0	3.6
REW	3.8	0.0	5.1	1.0	5.1	1.2	1.1	2.5	0.0	0.0	1.0	2.6	0.3	1.8	1.8	3.8	15.5	3.7	0.0	3.8

Ref. No.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	5.0	4.9	4.9	4.2	0.1	4.7	0.0	0.0	0.0
PLAY	4.8	1.4	0.0	0.0	1.7	0.0	0.0	0.0	2.5	0.0	4.3	5.1	4.9	4.8	0.1	4.1	4.8	0.0	0.0	0.0
REC	4.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	5.1	4.9	4.7	4.2	0.1	4.8	0.0	4.8	0.0
F.F	5.1	1.4	0.0	0.0	0.1	0.0	0.0	0.0	2.4	0.0	0.0	5.1	4.9	4.9	4.2	0.1	4.8	0.0	0.0	0.0
REW	5.1	1.4	0.0	0.0	0.1	0.0	0.0	0.0	2.4	0.0	0.0	5.1	4.8	5.0	4.3	0.1	4.8	0.0	0.0	0.0

Ref. No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	5.0	4.2	0.0	0.0	0.0	4.5	0.0	4.8	0.0	0.0	-	-	4.9	1.0	1.5	3.0	0.0	0.0	0.0	4.8
PLAY	5.0	4.2	0.0	2.4	2.4	4.5	0.0	0.0	0.0	0.0	-	-	4.9	0.8	1.5	3.0	4.8	0.0	0.0	4.9
REC	5.0	4.2	0.0	2.4	0.0	4.5	0.0	4.8	0.0	0.0	-	-	4.9	0.8	1.5	3.0	0.0	4.8	4.8	0.0
F.F	5.0	4.2	0.0	2.4	0.0	4.5	0.0	4.8	0.0	0.0	-	-	4.9	0.9	1.5	3.1	0.0	0.0	0.0	4.9
REW	5.0	4.2	0.0	2.4	0.0	4.5	0.0	4.8	0.0	0.0	-	-	4.9	0.9	1.5	3.0	0.0	0.0	0.0	4.9

Ref. No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0.0	0.0	5.0	0.0	4.8	4.8	0.0	0.0	5.0	4.8	4.8	4.8	1.4	2.1	5.0	1.9	0.0	2.5	4.8	0.0
PLAY	0.0	0.0	5.0	4.8	0.0	0.0	0.0	0.0	5.0	4.9	4.9	4.9	1.4	2.1	5.0	1.8	0.0	2.5	4.9	0.0
REC	0.0	4.8	5.0	4.8	0.0	0.0	0.0	0.0	5.0	4.8	4.9	4.8	0.0	3.4	5.0	1.9	0.0	2.5	4.8	0.0
F.F	0.0	0.0	5.0	4.8	4.8	0.0	0.0	0.0	5.0	4.9	4.9	4.9	1.4	2.1	5.0	1.9	0.0	2.5	4.9	0.0
REW	0.0	0.0	5.0	4.8	4.9	0.0	0.0	0.0	5.0	4.9	4.9	4.9	1.4	2.1	5.0	1.9	0.0	2.5	4.9	0.0

Ref. No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	1.9	1.9	1.0	2.0	0.3	0.0	0.0	0.0	4.9	0.0	0.0	4.8	0.0	0.0	0.0	5.2	5.2	0.0	0.0	2.7
PLAY	1.8	1.9	1.0	2.0	0.3	0.0	0.0	0.0	4.9	0.0	0.0	4.8	0.0	0.0	0.0	5.2	5.2	0.0	2.5	2.5
REC	1.9	1.9	1.0	2.0	4.5	0.0	0.0	0.0	4.8	0.0	0.0	4.8	0.0	0.0	0.0	5.2	5.2	0.0	2.4	2.5
F.F	1.9	1.9	1.0	2.0	0.3	0.0	0.0	0.0	4.9	0.0	0.0	4.8	0.0	0.0	0.0	5.2	5.2	0.0	2.9	2.5
REW	1.9	1.9	1.0	2.0	0.3	0.0	0.0	0.0	4.9	0.0	0.1	4.8	0.0	0.0	0.0	5.2	5.2	0.0	2.9	2.5

Ref. No.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	4.9	0.0	0.0	0.0	4.9	5.2	5.2	5.2	5.2	0.0	0.0	0.0	0.1	0.1	0.0	4.9	0.0	0.0	5.0	5.0
PLAY	4.8	0.4	0.0	0.0	2.4	4.9	4.9	4.9	5.2	0.0	0.0	0.0	5.0	5.0	0.0	4.9	2.7	2.4	4.9	4.9
REC	4.8	0.4	0.0	0.0	2.4	4.9	4.9	4.9	5.2	5.2	5.2	0.0	4.9	4.8	0.0	4.8	2.7	2.4	4.9	4.9
F.F	4.8	4.8	0.0	0.0	2.4	4.9	4.9	4.9	5.2	5.2	5.2	0.0	2.4	2.3	0.0	4.8	2.7	2.5	5.0	5.0
REW	4.8	4.8	4.8	0.0	2.4	4.9	4.9	4.9	5.2	5.2	5.2	0.0	2.3	2.4	0.0	4.9	2.7	2.5	5.0	5.0

Ref. No.	IC6001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116				
STOP	0.0	0.0	2.5	2.5	0.0	0.0	0.0	2.5	2.5	0.0	2.5	2.5	2.5	2.5	5.1	5.1				
PLAY	0.0	0.0	2.5	2.5	0.0	0.0	1.0	2.5	2.5	0.0	2.5	2.5	2.5	2.5	5.1	5.1				
REC	0.0	0.0	2.5	2.5	0.0	0.0	1.0	2.5	2.5	0.0	1.9	2.3	2.5	2.5	5.1	5.1				
F.F	0.0	1.6	2.5	2.5	0.0	0.0	1.0	2.5	2.5	0.0	2.5	2.5	2.6	2.6	5.1	5.1				
REW	0.0	1.6	2.5	2.5	0.0	0.0	1.0	2.5	2.5	0.0	2.5	2.5	2.6	2.6	5.1	5.1				

Ref. No.	IC6002							
MODE	1	2	3	4	5	6	7	8
STOP	0.0	0.0	0.0	0.0	4.9	4.9	4.8	5.0
PLAY	0.0	0.0	0.0	0.0	4.9	5.0	4.9	5.0
REC	0.0	0.0	0.0	0.0	4.9	4.9	4.8	5.0
F.F	0.0	0.0	0.0	0.0	5.0	5.0	4.9	5.0
REW	0.0	0.0	0.0	0.0	5.0	5.0	4.8	5.1

SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (SP MODE)

Ref. No.	Q1501			Q1502			Q6002			Q6005											
MODE	E	C		E	C		E	C	B	1	2	3	4	5	6						
STOP	4.7	0.0		4.9	0.0		2.5	1.9	0.0	5.0	0.0	0.0	0.5	0.0	0.0						
PLAY	4.8	0.0		5.0	0.0		2.5	0.0	1.8	5.0	0.0	0.0	0.5	0.0	0.0						
REC	4.7	0.0		4.9	0.0		2.5	0.0	1.9	5.0	0.0	0.0	0.5	0.0	0.0						
F.F	4.7	0.0		5.1	0.0		2.5	0.0	1.9	5.0	0.0	0.0	0.5	0.0	0.0						
REW	4.8	0.0		5.1	0.0		2.5	0.0	1.9	5.0	0.0	0.0	0.5	0.0	0.0						

Ref. No.	Q6007			Q6008			Q6009			Q6010											
MODE	E	C	B	E	C	B	E	C	B	E	C	B									
STOP	0.0	4.4	0.0	-0.1	11.8	0.0	1.9	5.0	2.5	3.7	3.9	2.3									
PLAY	0.0	4.4	0.0	11.2	11.8	11.8	1.8	5.0	2.5	3.7	3.9	2.3									
REC	0.0	4.7	0.0	-0.1	11.8	0.0	1.9	5.0	2.5	3.7	3.9	2.3									
F.F	0.0	4.4	0.0	0.0	11.8	0.0	1.9	5.0	2.5	3.7	3.9	2.3									
REW	0.0	4.4	0.0	0.0	11.8	0.0	1.9	5.0	2.5	3.7	3.9	2.3									

Ref. No.	QR6001			QR6002					QR6004					QR6005			QR6006		
MODE	E	C	B	1	2	3	4	5	1	2	3	4	5	E	C	B	E	C	B
STOP	0.0	0.0	4.8	1.9	2.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8	0.0	2.3	2.4	5.2	5.1	0.0
PLAY	0.0	11.8	0.0	1.9	2.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8	0.0	2.3	2.4	5.2	5.1	0.0
REC	0.0	0.0	4.8	1.4	1.6	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8	0.0	2.3	2.4	5.2	5.1	0.0
F.F	0.0	0.0	4.8	0.2	0.4	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8	0.0	2.3	2.4	5.2	5.1	0.0
REW	0.0	0.0	4.8	1.2	0.6	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8	0.0	2.3	2.4	5.2	5.1	0.0

443NT [L]	4.43 NTSC Ⓛ
A. COMP	AUDIO COMPONENT SIGNAL
A. COMPO	AUDIO COMPONENT SIGNAL
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ
A. DEF [S]	AUDIO DEFEAT
A. DEF [S] [L]	AUDIO DEFEAT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ
A. DUB [H]	AUDIO DUBBING Ⓗ
A. ERASE	AUDIO ERASE
A. H. SW	AUDIO HEAD SWITCHING PULSE
A. HEAD [R]	AUDIO HEAD (REC)
A. HEAD [W]	AUDIO HEAD (PLAY)
A. IN [L]	AUDIO INPUT (L)
A. IN [R]	AUDIO INPUT (R)
A. MUT [H]	AUDIO MUTE Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)
A. OUT [R]	AUDIO OUTPUT (R)
A. RF OUT	AUDIO RF SIGNAL OUTPUT
A/VS/S. DATA	AV SW/SERIAL DATA
AC ONLINE	AC ONLINE
AC. O/EE. H	AC ONLINE/EE Ⓗ
AFC S C	AFC S CURVE
AFC [S]	AFC S CURVE
AFC. DEF	AFC DEFEAT
ARFC OUT	AUDIO RF SIGNAL OUTPUT
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE
AUDIO IN [L]	AUDIO INPUT (L)
AUDIO IN [R]	AUDIO INPUT (R)
AUDIO OUT [L]	AUDIO OUTPUT (L)
AUDIO OUT [R]	AUDIO OUTPUT (R)
AUDIO SELECT [H]	AUDIO SELECT Ⓗ
AUDIO. L	AUDIO (L)
AUDIO. R	AUDIO (R)
AV CNT	AV CONTROL
AV CTL	AV CONTROL
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK
AV. C.M.	AV CONTROL MODE
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)
AVSW/METER. L	AV SW/LEVEL METER (L)
B MODE. H	B MODE Ⓗ
B.G.P	BURST GATE PULSE
BACKUP 5V	BACK UP 5V
BAND. U.E.	BAND U
BANDVL. D	BAND VL
BI/MI [L]	BILINGUAL/MIX Ⓛ
BIL	BILINGUAL
BIL [L]	BILINGUAL Ⓛ
BIL. [H]	BILINGUAL Ⓗ
BIL/M1 [L]	BILINGUAL Ⓛ
BS CLOCK	BS CLOCK
BS DATA	BS DATA
BS LCH IN	BS L CHANNEL INPUT
BS MIX [H]	BS MIX Ⓗ
BS MON [H]	BS MONITOR Ⓗ
BS MONI [H]	BS MONITOR Ⓗ
BS RCH IN	BS R CHANNEL INPUT
BS VIDEO	BS VIDEO SIGNAL
BS VIDEO/BS1	BS VIDEO SIGNAL
BS [H]	BS Ⓗ
BS. LEVEL	BS LEVEL
BS. M [H]	BS MONITOR Ⓗ
BS/VTR [H]	BS/VTR Ⓗ
BUS CLK	BUS CLOCK
BUS LSN	BUS LISTEN
BUS TLK	BUS TALK
BUZZER	BUZZER
CAP EC	CAPSTAN TORQUE CONTROL
CAP M GND	CAPSTAN MOTOR GND
CAP. ET	CAPSTAN TORQUE CONTROL
CAP. FG1	CAPSTAN FG1 PULSE
CAP. FG2	CAPSTAN FG2 PULSE
CAS. SW	CASSETTE SW
CCN	PLAYBACK CONTROL SIGNAL (–)
CCP	PLAYBACK CONTROL SIGNAL (+)
CHM	CONTROL SIGNAL (+)
CHP	CONTROL SIGNAL (–)
CINEM [L]	CINEMA Ⓛ
CINEMA [L]	CINEMA Ⓛ
CINEMA/MIX	CINEMA/MIX
CKL	RATCH LOCK
CKS	SHIFT LOCK
CL	CLOCK
CLK	CLOCK
CLK (C.G)	CLOCK
CLOCK. IN	CLOCK INPUT
CLP	CLAMP
COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
COLOR [H]	COLOUR Ⓗ
CONV	CONVERTOR
CS	CHIP SELECT
CTL GND	CONTROL GND
CTL HEAD [+]	CONTROL HEAD (+)
CTL HEAD [–]	CONTROL HEAD (–)
CTL [+]	CONTROL HEAD (+)
CTL [–]	CONTROL HEAD (–)
CUE BIAS	CUE BIAS
CURRENT LIM	CURRENT LIMMITER
CYL ET	CYLINDER TORQUE CONTROL

CYL GND	CYLINDER GND
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
D. FM REC [L]	DELAIED FM RECORDING Ⓛ
D. GND	DIGITAL GND
D. REC [H]	DELAYED RECORDING Ⓗ
D4/S. LED	D4/STILL LED
D4/STILLED	D4/STILL LED
DAC [CLK]	TUNER DAC (CLOCK)
DAC/FSCS	TUNER DAC/FS CHIP SELECT
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ
DATA	DATA
DECODER [L]	DECODER (L)
DECODER [R]	DECODER (R)
DEW	DEW
DEW SNS	DEW SENSOR
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ
E. REC 5V	EXCEPT RECORDING 5V
EC	ERROR TORQUE CONTROL
ECR	ERROR TORQUE CONTROL REFERENCE VOLTAGE
EDT TRIG [L]	EDIT TRIGGER Ⓛ
EDIT [H]	EDIT Ⓗ
EE [H]	EE Ⓗ
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ
EE. VV. TR	EE/VV/TRICK PLAY
EJECT. PO	EJECT POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK
ENV. SEL	ENVELOPE SELECT
ENVE. OUT	ENVELOPE OUTPUT
ENVE. SEL	ENVELOPE SELECT
ENV SELECT	ENVELOPE SELECT
EP [H]	LP Ⓗ
EP/LP [H]	LP Ⓗ
EP/LP/SP	LP/SP
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ
EPROMCS	EPROM CHIP SELECT
EX. REC 5V	EXCEPT RECORDING 5V
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ
FG1 IN	FG1 PULSE INPUT
FG2 IN	FG2 PULSE INPUT
FILTER ADJUSTMENT	FILTER ADJUSTMENT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ
FLY ON [H]	FLYING ERASE HEAD ON Ⓗ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ
FM MUT [H]	FM AUDIO MUTE Ⓗ
FM MUTE [H]	FM AUDIO MUTE Ⓗ
FM OUT [L]	FM OUTPUT (L)
FM OUT [R]	FM OUTPUT (R)
FM PACK OUT [L]	FM PACK OUTPUT (L)
FM PACK OUT [R]	FM PACK OUTPUT (R)
FM/BS SEL [L]	FM/BS SELECT (L)
FM/BS SEL [R]	FM/BS SELECT (R)
FS. CLK	FS CLOCK
FUL. E [H]	FULL ERASE HEAD ON Ⓗ
FULL. E [H]	FULL ERASE HEAD ON Ⓗ

FULL. E. 12V	FULL ERASE 12V
GND [A]	GND (ANALOG)
GND [TU]	GND (TUNER)
GND/N. SW. 12V	GND/NON SW 12V
H. SYNC	HORIZONTAL SYNC
H. AMP. SW	HEAD AMP SW PULSE
H. P <R>	HEAD PHONE (R)
H. P <L>	HEAD PHONE (L)
H. P GND	HEAD PHONE GND
H. P OUT [L]	HEAD PHONE OUTPUT (L)
H. P OUT [R]	HEAD PHONE OUTPUT (R)
H. SW	HEAD SW PULSE
HEAD PHONE [L]	HEAD PHONE (L)
HEAD PHONE [R]	HEAD PHONE (R)
HEAD SW	HEAD SW
HEATER [+]	HEATER (+)
HEATER [–]	HEATER (–)
HSS	HORIZONTAL SYNC SIGNAL
HTR [+]	HEATER (+)
HTR [–]	HEATER (–)
I RFE	REFERENCE CURRENT
ICL	CONTROL AGC CIRCUIT
IF	INTERMEDIATE FREQUENCY
IN SELA1	INPUT SELECT A1 POSITION
IN SELA2	INPUT SELECT A2 POSITION
IN SELA3	INPUT SELECT A3 POSITION
INS L/R [L]	INSERT Lch/Rch Ⓛ
INS. [H]	INSERT Ⓗ
INSEL A1	INPUT SELECT A1 POSITION
INSEL A2	INPUT SELECT A2 POSITION
INSERT	INSERT
INSERT [H]	INSERT Ⓗ
IO CS	INPUT/OUTPUT CHIP SELECT
JOG1	JOG1
JOG S3 LED/FOWRD	JOG LED/FORWARD LED
JOG/F. LED	JOG LED/FORWARD LED
JSB [H]	JSB Ⓗ
JST. CLCK	JUST CLOCK
JST. CLK	JUST CLOCK
JST. CLOCK	JUST CLOCK
L. OUT	Lch OUTPUT
L. CH [H]	Lch Ⓗ
L. CH [L]	Lch Ⓛ
LED (MAIN)	LED (MAIN)
LED (STEREO)	LED (STEREO)
LED (SUB)	LED (SUB)
LED CKL	LED SERIAL CLOCK
LED CKS	LED SERIAL CLOCK
LED DATA	LED SERIAL DATA
LINE IN 1 [L]	LINE INPUT 1 (L)
LINE IN 1 [R]	LINE INPUT 1 (R)
LINE IN 2 [L]	LINE INPUT 2 (L)
LINE IN 2 [R]	LINE INPUT 2 (R)
LINE IN V	LINE INPUT VIDEO
LINE IN [L]	LINE INPUT (L)

LINE IN [R]	LINE INPUT (R)
LINE OUT [L]	LINE OUTPUT (L)
LINE OUT [R]	LINE OUTPUT (R)
LP [H]	LP Ⓗ
LPTRI [L]	LP TRICK PLAY Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING
M GND	MOTOR GND
M REG	MOTOR REGULATOR
MAIN OUT	MAIN OUTPUT
MAIN [L]	MAIN Ⓛ
MAIN/MONO	MAIN/MONAURAL
MAX IN	MAXIMAM INPUT
MES [H]	MESECAM Ⓗ
MESE [H]	MESECAM Ⓗ
MESE [L]	MESECAM Ⓛ
METER 5V	LEVEL METER 5V
METER [L]	LEVEL METER (L)
METER [R]	LEVEL METER (R)
METER. L/AVS	LEVEL METER (L)
METER. R/AVC	LEVEL METER (R)
MI/BI [L]	MIX Ⓗ/BILIGUAL
MIC GND	MIC GND
MIC IN	MIC INPUT
MIC IN [L]	MIC INPUT (L)
MIC IN [R]	MIC INPUT (R)
MIC [H]	MIC Ⓗ
MIX [H]	MIX Ⓗ
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ
MODE SEL	AUDIO MODE SELECT
MODE SW	AUDIO MODE SW
MODE. S. IN	AUDIO MODE SELECT INPUT
MODE. S. OUT	AUDIO MODE SELECT OUTPUT
MONO [H]	MONAURAL Ⓗ
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ
MONO2 [L]	MONAURAL 2
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)
MOTOR GND	MOTOR GND
MUTE	MUTE
N. A. REC [L]	NORMAL AUDIO RECORDING
N. SW 12V	NON SW 12V
N. SW. 5. DET	NON SW 5V DETECT
NICAM	NICAM
NICAM [L]	NICAM Ⓛ
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ
NORMAL [H]	NORMAL Ⓗ
NR BIAS	NR BIAS
NTSC [L]	NTSC Ⓛ
OCH	CONTROL AGC CIRCUIT
OUT	OUTPUT

P-OFF [H]	POWER OFF Ⓗ
P-OFF [L]	POWER OFF Ⓛ
P. FAIL	POWER FAILURE DETECT
P. OFF [H]	POWER OFF Ⓗ
P. OFF [L]	POWER OFF Ⓛ
PAL [H]	PAL Ⓗ
PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
PB ADJ OUT	PLAYBACK ADJUST OUTPUT
PB OUT	PLAYBACK OUTPUT
PB. H	PLAYBACK Ⓗ
PFG	PG/FG
PHOTSN +B	PHOTO SENSOR +B
PICT. CNT	PICTURE CONTROL
PLAY LED/RVS LED	PLAY LED/REVERSE LED
PLAY. PO	PLAY POSITION
PLAY/R. LED	PLAY LED/REVERSE LED
PLY/DEW	PLAY/DEW Ⓗ
POWER OFF [L]	POWER OFF Ⓛ
PREROLL [H]	PREROLL Ⓗ
PWRFAIL	POWER FAILURE DETECT
R. CH [H]	Rch Ⓗ
R. CH [L]	Rch Ⓛ
R. ST	RESET
R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
RCH [H]	Rch Ⓗ
REC 12V	RECORDING 12V
REC CHROMA	RECORDING CHROMINANCE SIGNAL
REC H	RECORDING Ⓗ
REC IN	RECORDING INPUT
REC OUT [L]	RECORDING OUTPUT Ⓛ
REC START	RECORDING START
REC VR [C]	RECORDING VOLUME (COMMON)
REC VR [L]	RECORDING VOLUME (L)
REC VR [R]	RECORDING VOLUME (R)
REC Y	RECORDING LUMINANCE SIGNAL
REC [H]	RECORDING Ⓗ
REC. C	RECORDING CHROMINANCE SIGNAL
REC. Y	RECORDING LUMINANCE SIGNAL
REC/EE CTL	RECORDING/EE CONTROL
REEL-T	REEL PULSE (TAKE-UP)
REEL-S	REEL PULSE (SUPPLY)
REGULATOR FILTER	REGULATOR FILTER
RESET	RESET
REV M F/R	REVIEW MOTOR FORWARD/REVERSE
REV M V1	REVIEW MOTOR V1
REV M V2	REVIEW MOTOR V2
REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
REV MOTOR V1	REVIEW MOTOR V1
REV MOTOR V2	REVIEW MOTOR V2
REV MOTOR [+]	REVIEW MOTOR (+)
REV MOTOR [–]	REVIEW MOTOR (+)
REV. M. GND	REVIEW MOTOR GND
RF. CHROMA	RF CHROMINANCE SIGNAL

RF OUT	RF OUTPUT
RF Y	RF LUMINANCE SIGNAL
RF. Y. IN	RF LUMINANCE SIGNAL INPUT
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT
ROTAR. SW	ROTARY SW
ROTARY	ROTARY SW
RST	RESET
RST [L]	RESET Ⓛ
Rch/INST	Rch/INSERT
S IN	SERIAL DATA INPUT
S OUT	SERIAL DATA OUTPUT
S-PHOTO	SUPPLY PHOTO TRANSISTOR
S-RL. PLS	SUPPLY REEL PULSE
S. CLK	SERIAL CLOCK
S. CLK/AV	SERIAL CLOCK/AV
S. DATA	SERIAL DATA
S. DATA/A	SERIAL DATA
S. PHOTO	SUPPLY PHOTO TRANSISTOR
S. TAB [L]	SAFETY TAB SW ON Ⓛ
S/P/N	SECAM/PAL/NTSC
SC IN	SERIAL CLOCK INPUT
SC OUT	SERIAL CLOCK OUTPUT
SCK SELECT	SERIAL CLOCK SELECT
SEL OUT [L]	SELECT OUTPUT (L)
SEL OUT [R]	SELECT OUTPUT (R)
SHUTTLE 1	SHUTTLE 1
SIF	SOUND INTERMEDIATE FREQUENCY
SLMUT [H]	INPUT SELECT MUTE Ⓗ
SLNID [+]	SOLENOID (+)
SLNID [–]	SOLENOID (–)
SLW TR. MM	SLOW TRACKING MONO MULTI
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE
SNS. GND	SENSOR GND
SOFT [H]	SOFT TAPE PLAY Ⓗ
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ
SOLENOID ON [L]	SOLENOID ON Ⓛ
SP [H]	SP Ⓗ
SP/L/SLP	SP/LP
SSS [L]	SLOW/STILL/STOP
STEREO LED	STEREO LED
STEREO [H]	STEREO Ⓗ
STEREO [L]	STEREO Ⓛ
STOP. PO	STOP POSITION
STOP/5V	STOP POSITION/5V
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT
STOP1/PAL:ST	STOP1 POSITION/PAL
STOP2. PO	STOP 2 POSITION
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW
STREO [H]	STEREO Ⓗ
SUB BIAS	SUB BIAS
SUB. SW	SUB SW
SVHS CAS [L]	S-VHS CASSETTE Ⓛ
SW. 5. DET	SW 5V DETECT
SYNC [L]	SYNC Ⓛ
SYSCON 5V	SYSTEM CONTROL 5V
SYSTEM	SYSTEM SW
T-PHOTO	TAKE-UP PHOTO TRANSISTOR
T-RL. PLS	TAKE-UP REEL PULSE
T. BUSCLK	TIMER BUS CLOCK
T. BUSLSN	TIMER BUS LISTEN
T. BUSTLK	TIMER BUS TALK
T. END [L]	TAPE END Ⓛ
T. PHOTO	TAKE-UP PHOTO TRANSISTOR
TAPE END [L]	TAPE END Ⓛ
TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
TEST	TEST MODE
TPZ	TRAPEZOIDAL WAVE CIRCUIT
TRIC [L]	TRIC PLAY Ⓛ
TRICK [L]	TRIC PLAY Ⓛ
TRK. ENV	AUTO TRACKING ENVELOPE DETECT
TU. AUDIO	TUNER AUDIO
TU. GND	TUNER GND
TU. V. IN	TUNER VIDEO SIGNAL INPUT
TU. VIDEO	TUNER VIDEO
TUN NOR IN	TUNER NORMAL INPUT
TUN R	TUNER AUDIO (R)
TUN. AUDIO IN	TUNER AUDIO INPUT
TUNER 12V	TUNER 12V
TUNER L	TUNER AUDIO (L)
TUNER V IN	TUNER VIDEO SIGNAL INPUT
TUNER [L]	TUNER AUDIO (L)
TUNER [N]	TUNER AUDIO (NORMAL)
TUNER [R]	TUNER AUDIO (R)
TUNER. 12	TUNER 12V
TUOFF [H]	TUNER OFF Ⓗ
TV. AUDIO	TV AUDIO
TV/VTR	TV/VTR
TXTON [L]	TEXT ON Ⓛ
U. REG45V	UNREGULATOR 45V
UNREG	UNREGULATOR
UNREG19V	UNREGULATOR 19V
V. REF	REFERENCE VOLTAGE
V. EE [H]	VIDEO EE Ⓗ
V. EE [L]	VIDEO EE Ⓛ
VCO REF	REFERENCE OSCILLATER
VD. IN	VIDEO SIGNAL INPUT
VD. OUT	VIDEO SIGNAL OUTPUT
VIDEO EE [L]	VIDEO EE Ⓛ
VIDEO IN	VIDEO SIGNAL INPUT
VIDEO OUT	VIDEO SIGNAL OUTPUT
VM	MOTOR VOLTAGE
VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
VSS	VERTICAL SYNC SIGNAL
VTR [H]	VTR Ⓗ
VTR. 12V	VTR 12V
X IN	OSCILLATOR INPUT
X OUT	OSCILLATOR OUTPUT

For your safety please read the following text carefully

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstance should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

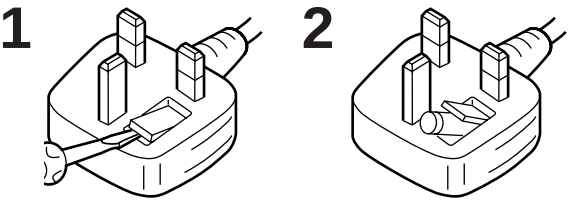
How to replace the Fuse

- There are two types of the AC Mains Lead assembly: **A** and **B** as shown below.

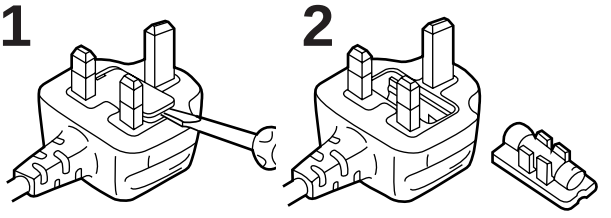
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

TYPE A



TYPE B



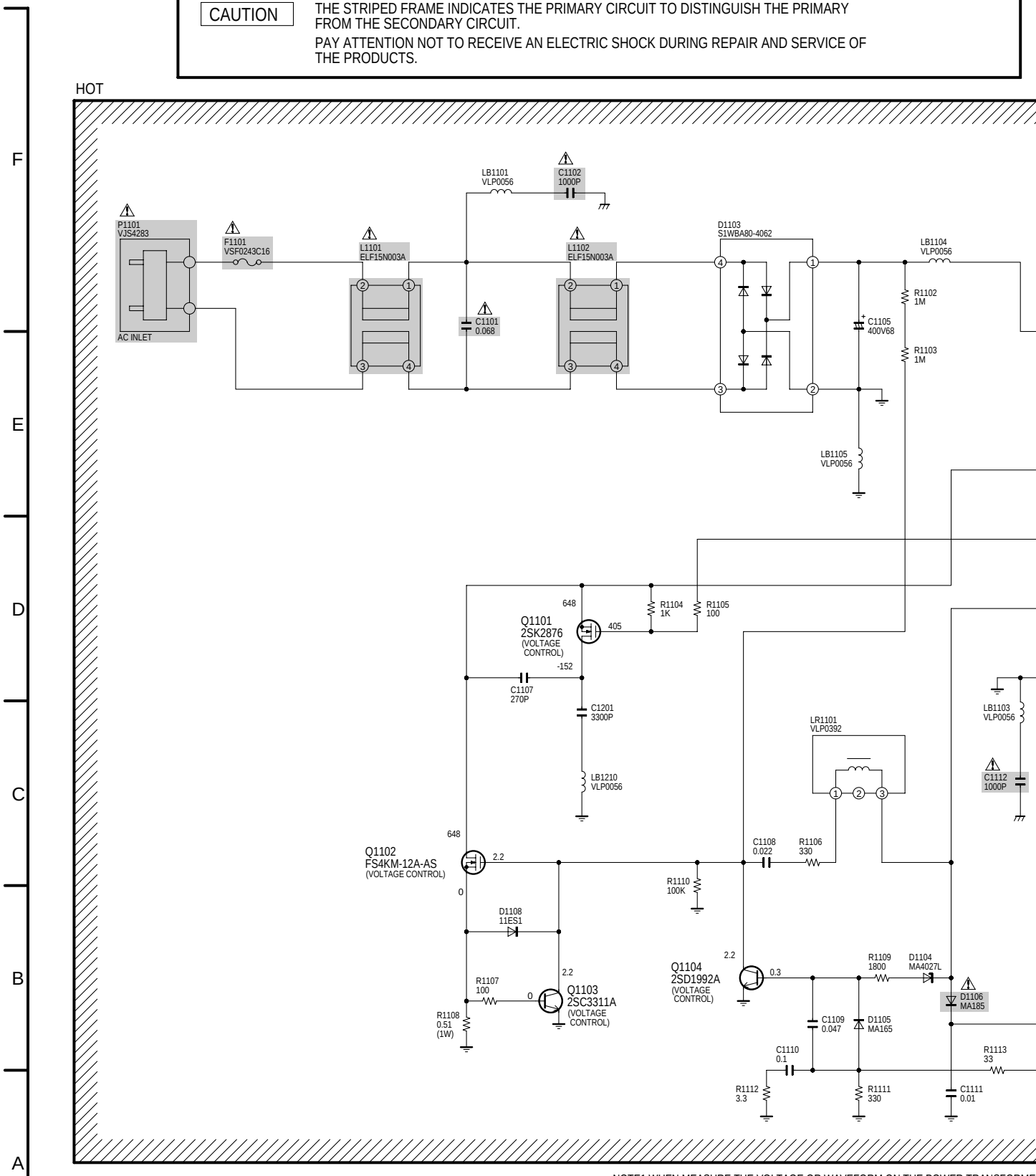
8 SCHEMATIC DIAGRAMS

8.1. POWER TRANSFORMER SECTION IN MAIN SCHEMATIC DIAGRAM

CAUTION

THE STRIPED FRAME INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.

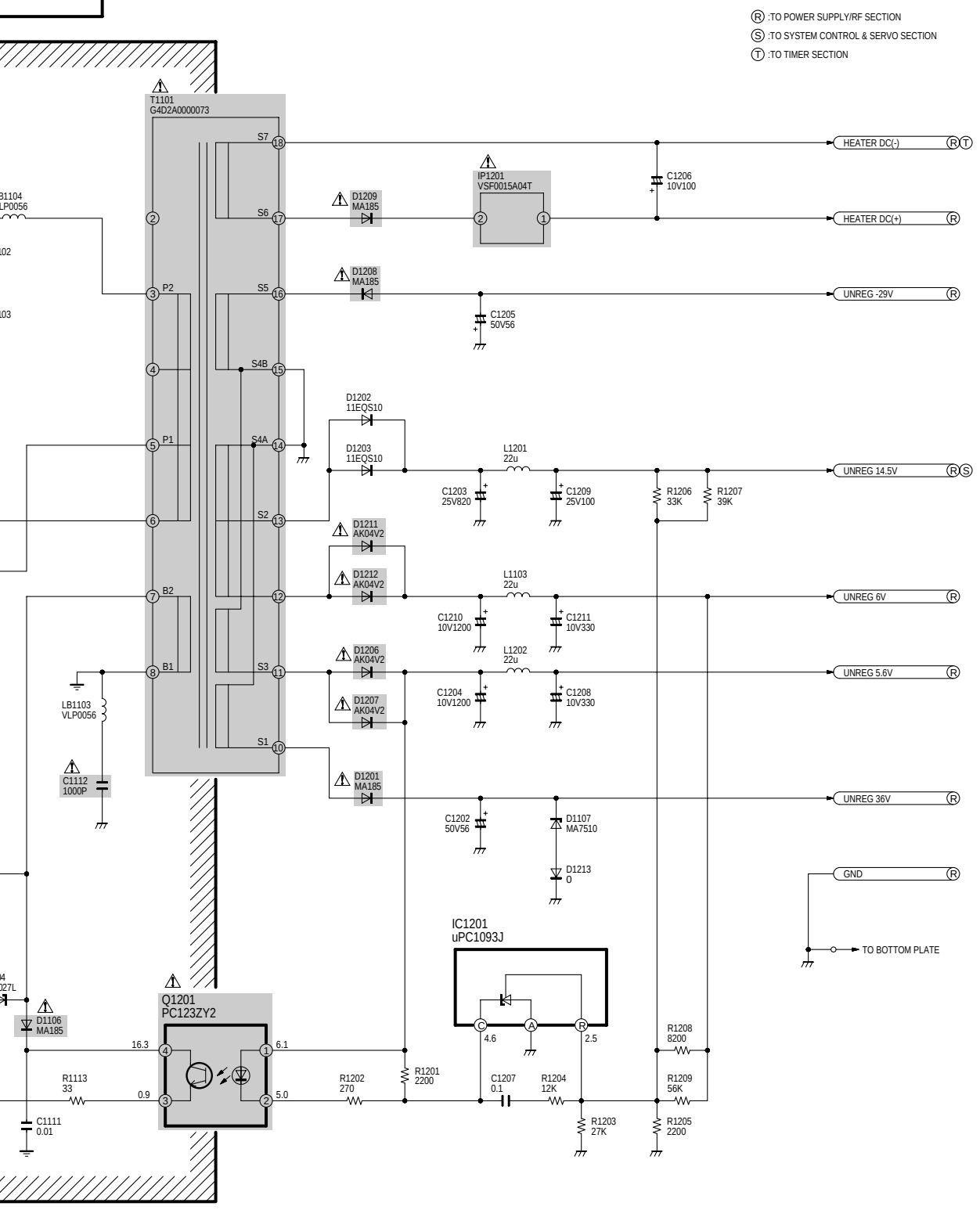
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,USE ONLY THE SAME TYPE.

NOTE1:WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORME
CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE..... ⏚
SECONDARY SIDE... ⏚

NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN
INPUT AC IS 240V.



POWER TRANSFORMER
FOLLOWS.

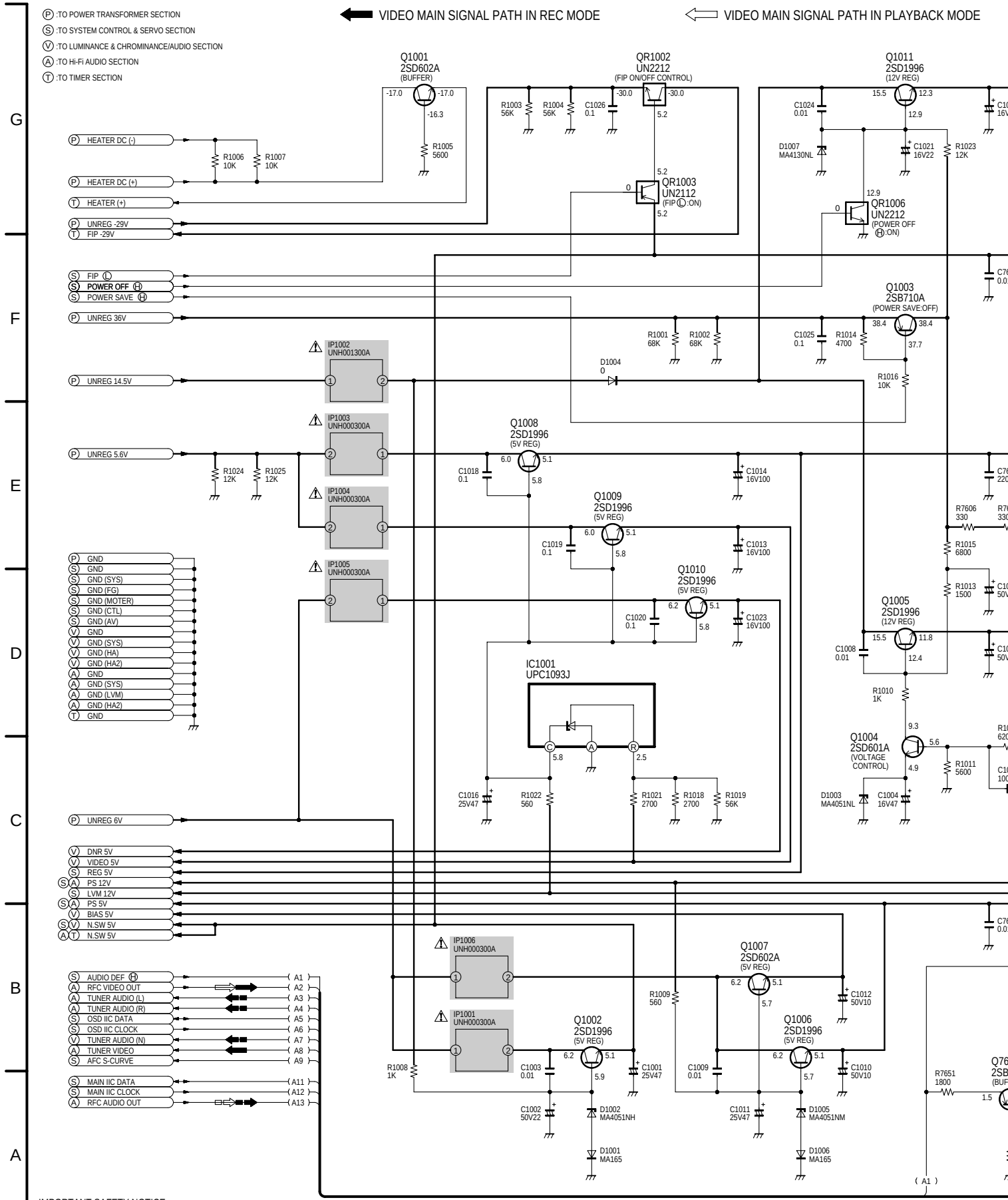
N THE VOLTAGE WHEN

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:THE MEASURMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NV-HS870EG/B/EC
POWER TRANSFORMER
SECTION IN MAIN
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10

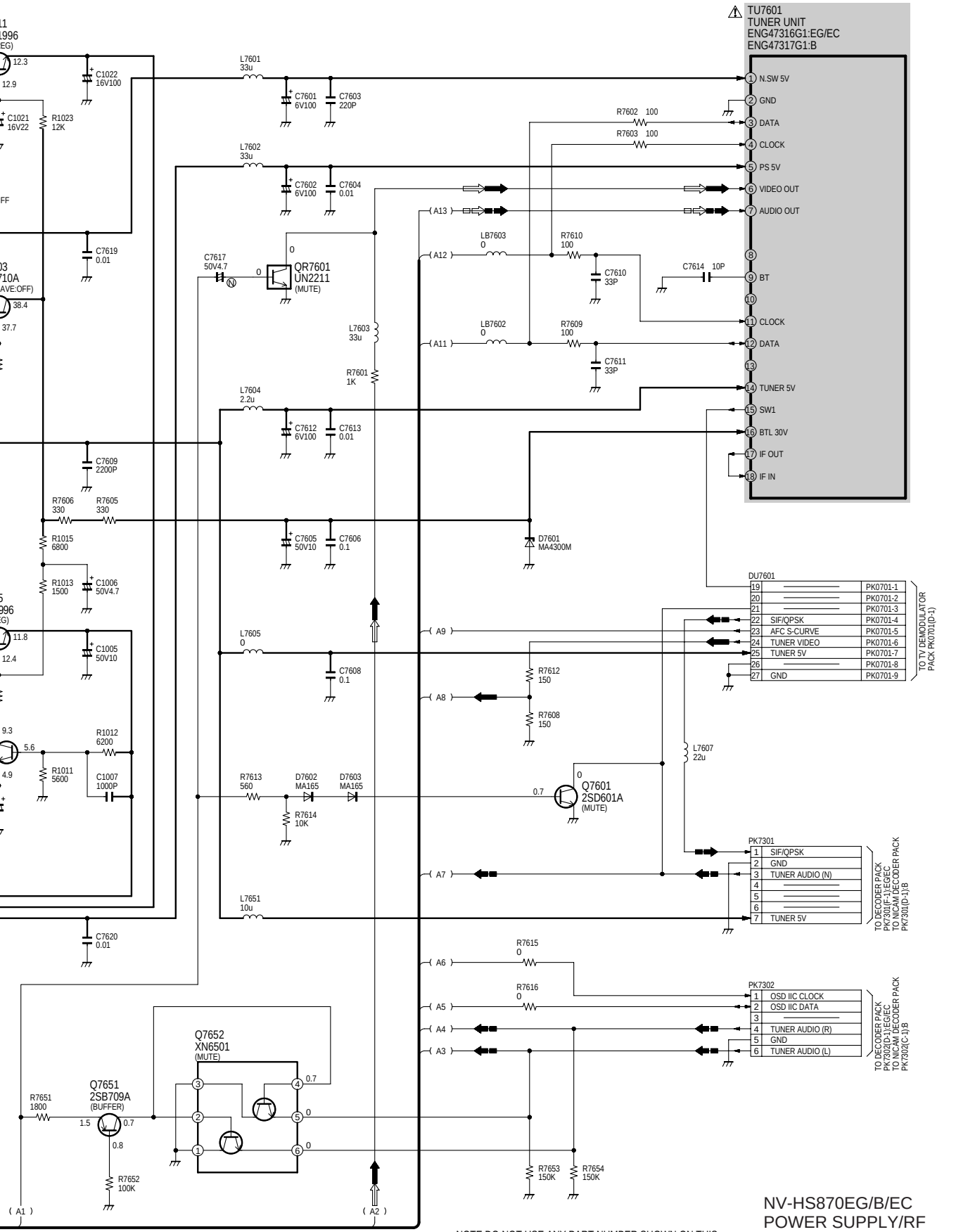
8.2. POWER SUPPLY/ RF SECTION IN MAIN SCHEMATIC DIAGRAM



YBACK MODE

AUDIO MAIN SIGNAL PATH IN REC MODE

AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



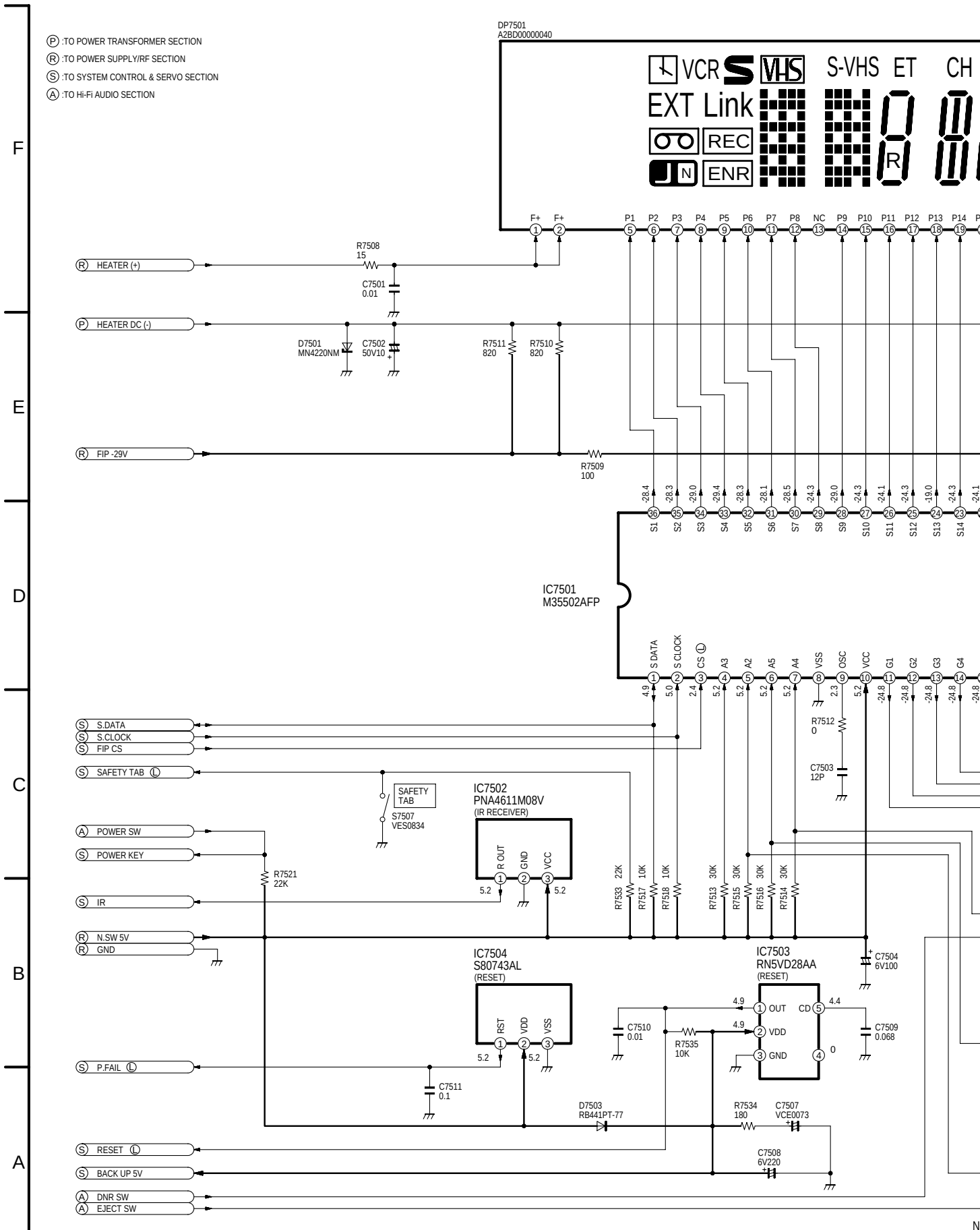
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

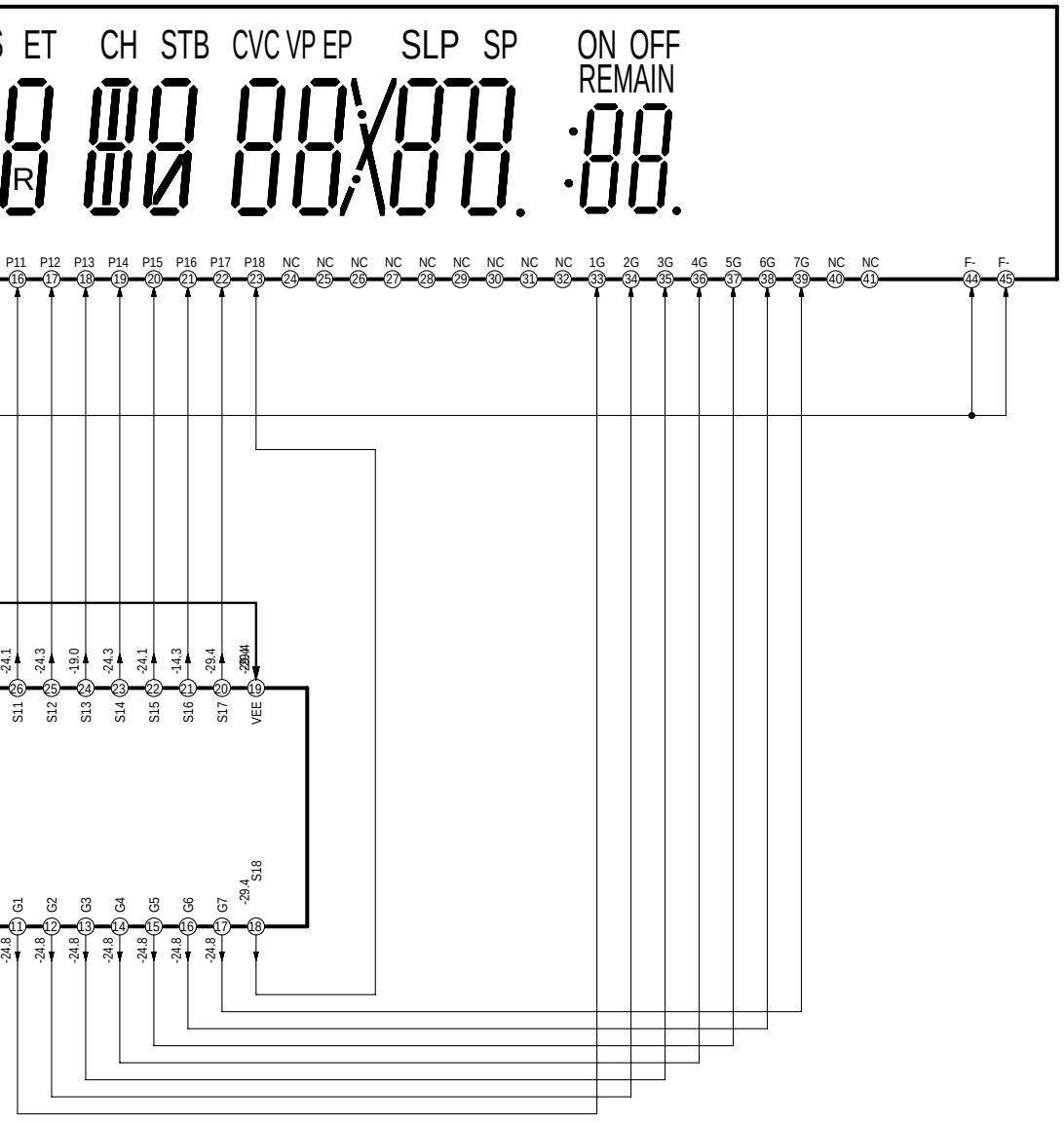
DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

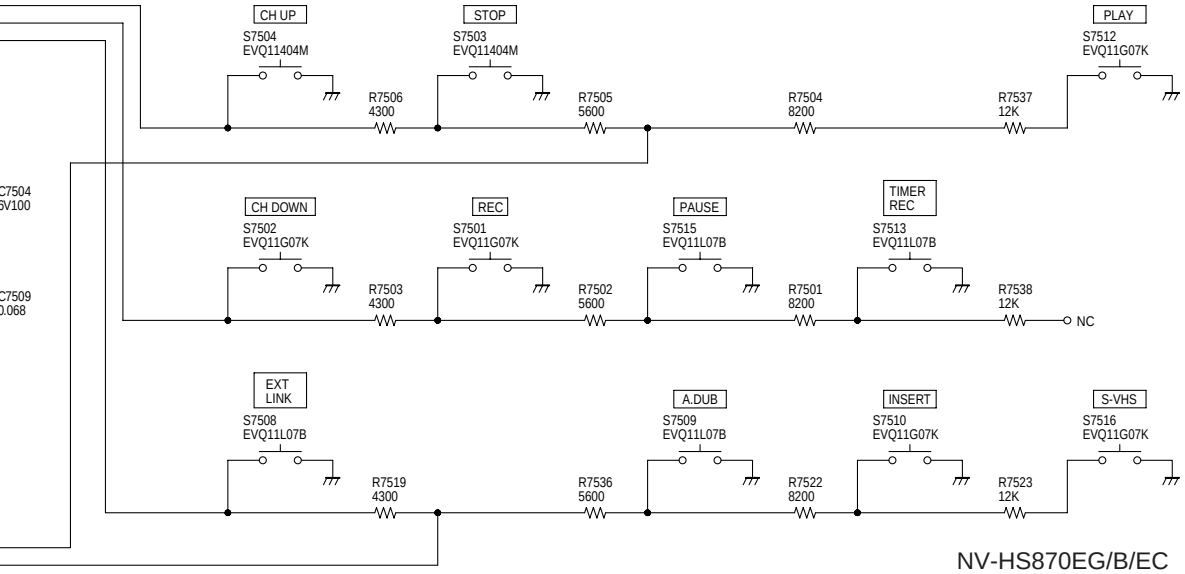
NV-HS870EG/B/EC
POWER SUPPLY/RF
SECTION IN MAIN
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10

8.3. TIMER SECTION IN MAIN SCHEMATIC DIAGRAM





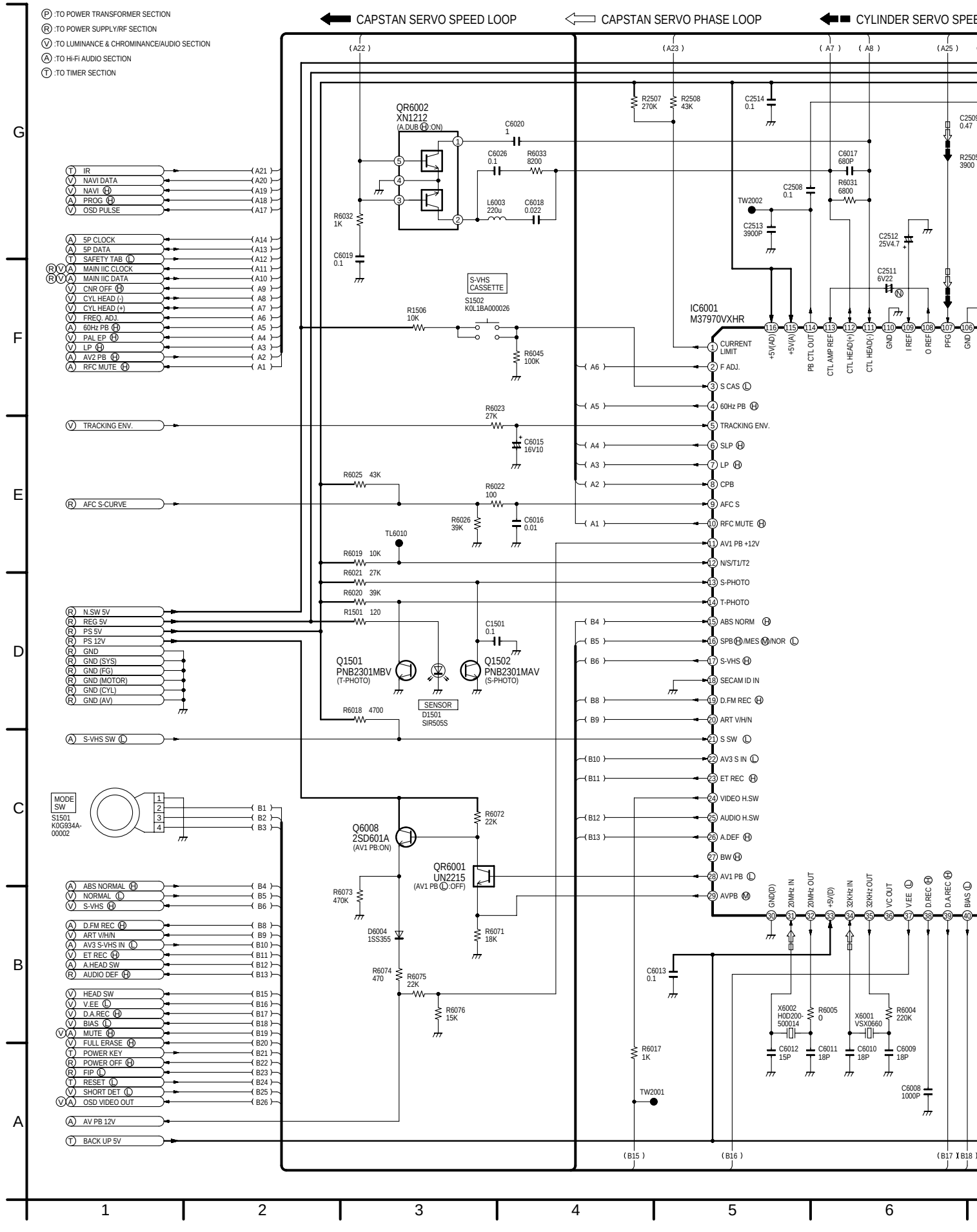


NOTE:DO NOT USE PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLESE REFER TO PARTS LIST.

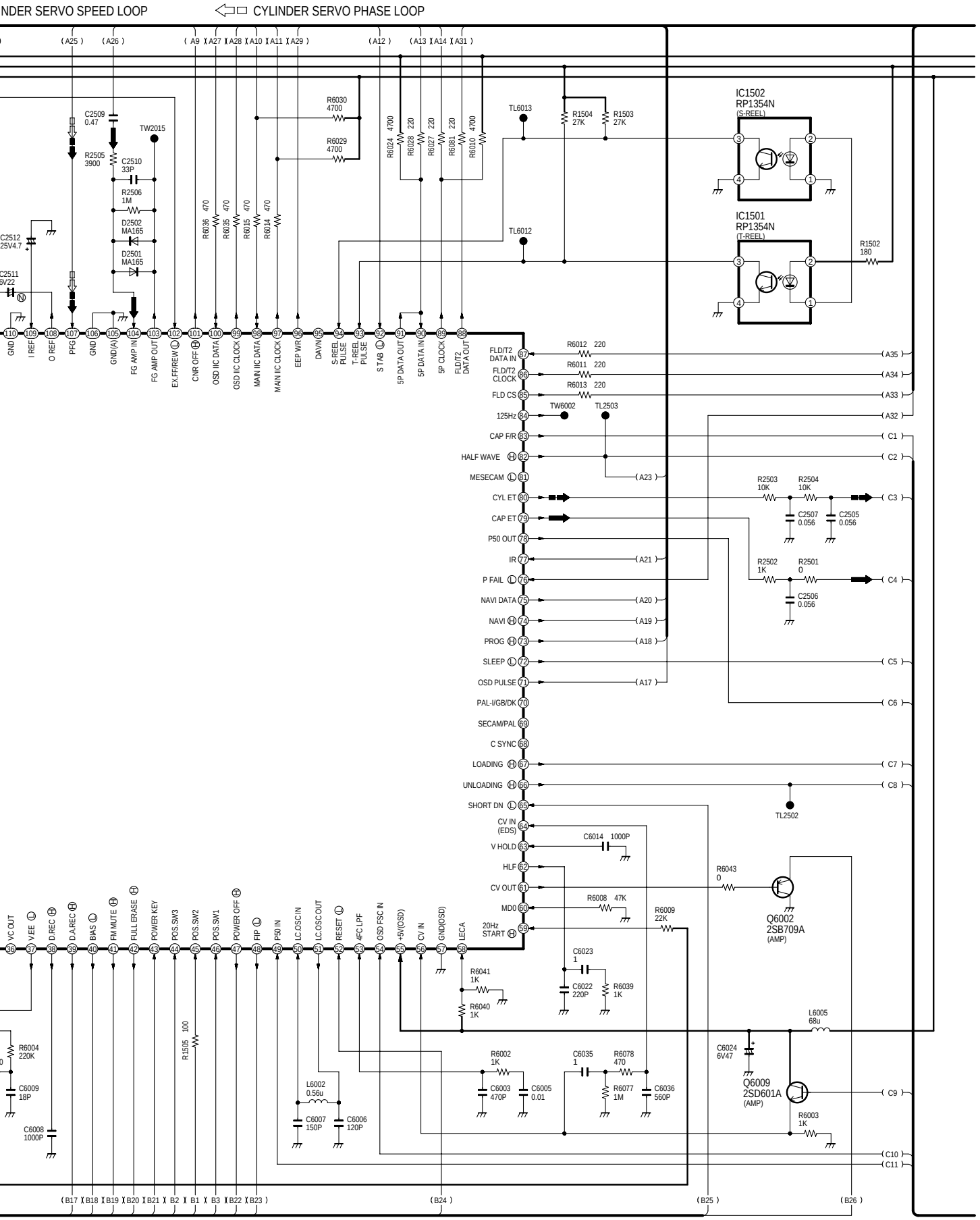
NV-HS870EG/B/EC
TIMER SECTION IN MAIN
SCHEMATIC DIAGRAM

5 6 7 8 9

8.4. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

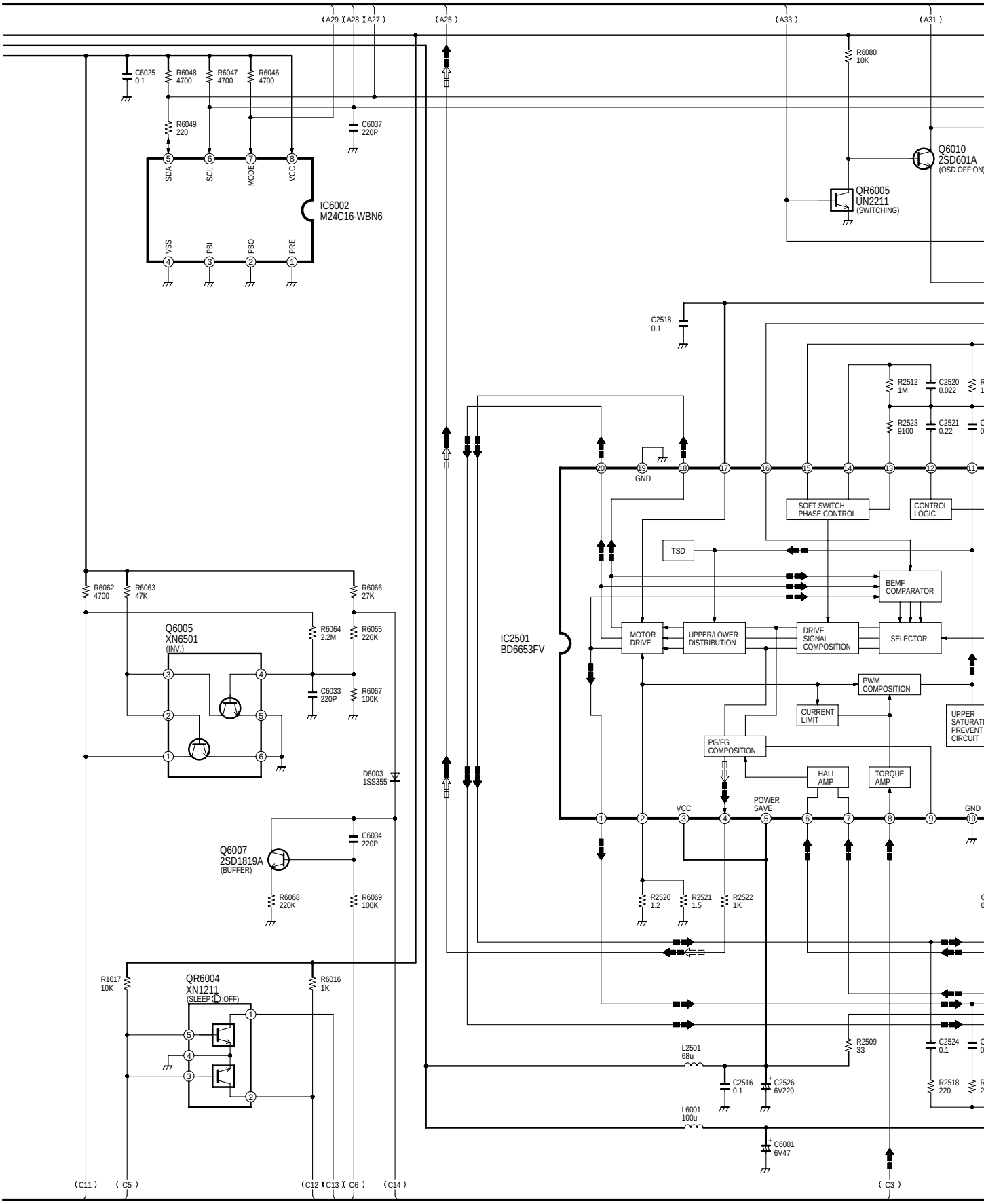


AM



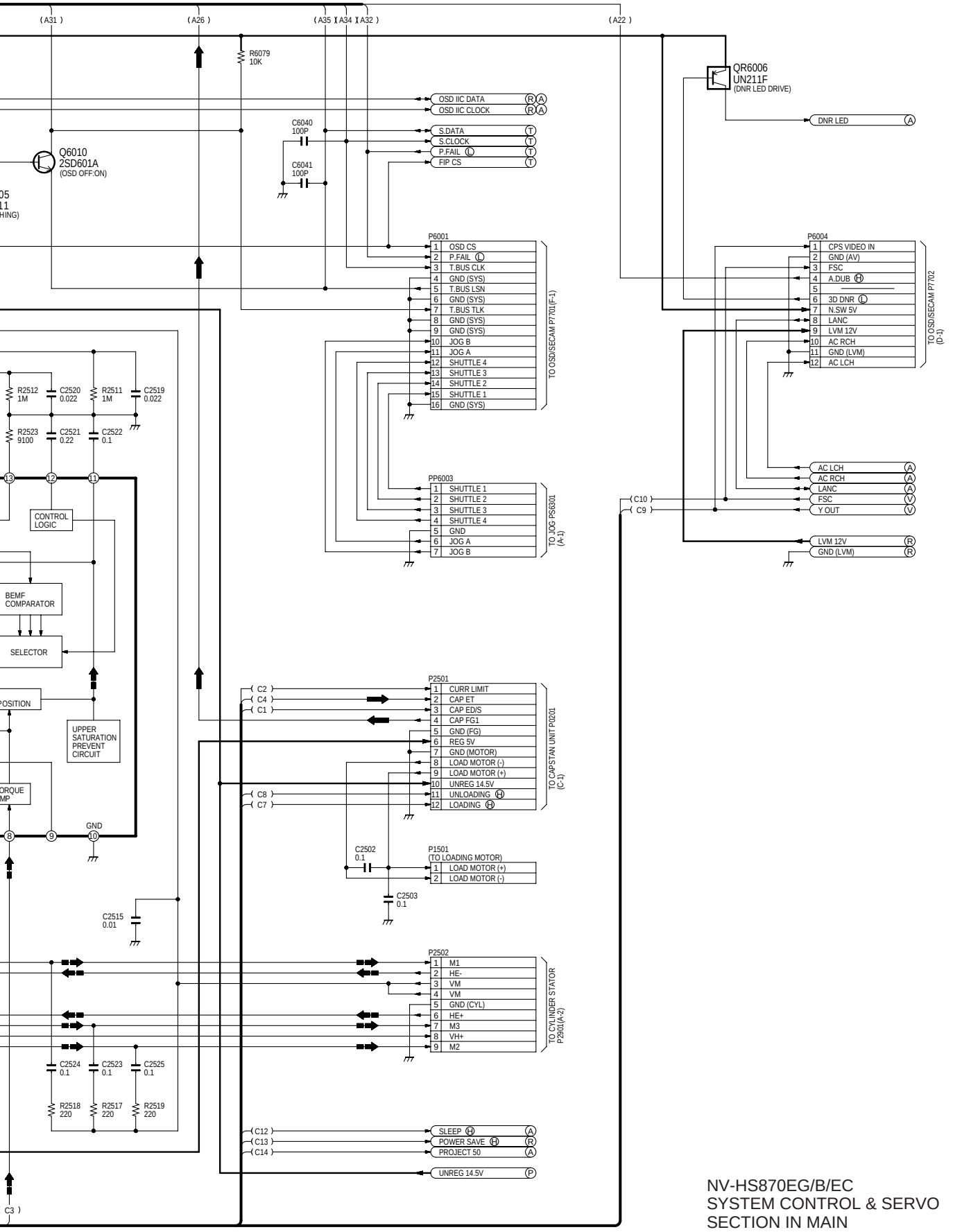
NV-HS870EG/B/EC SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

6	7	8	9	10	11	12



NV-HS870EG/B/EC SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

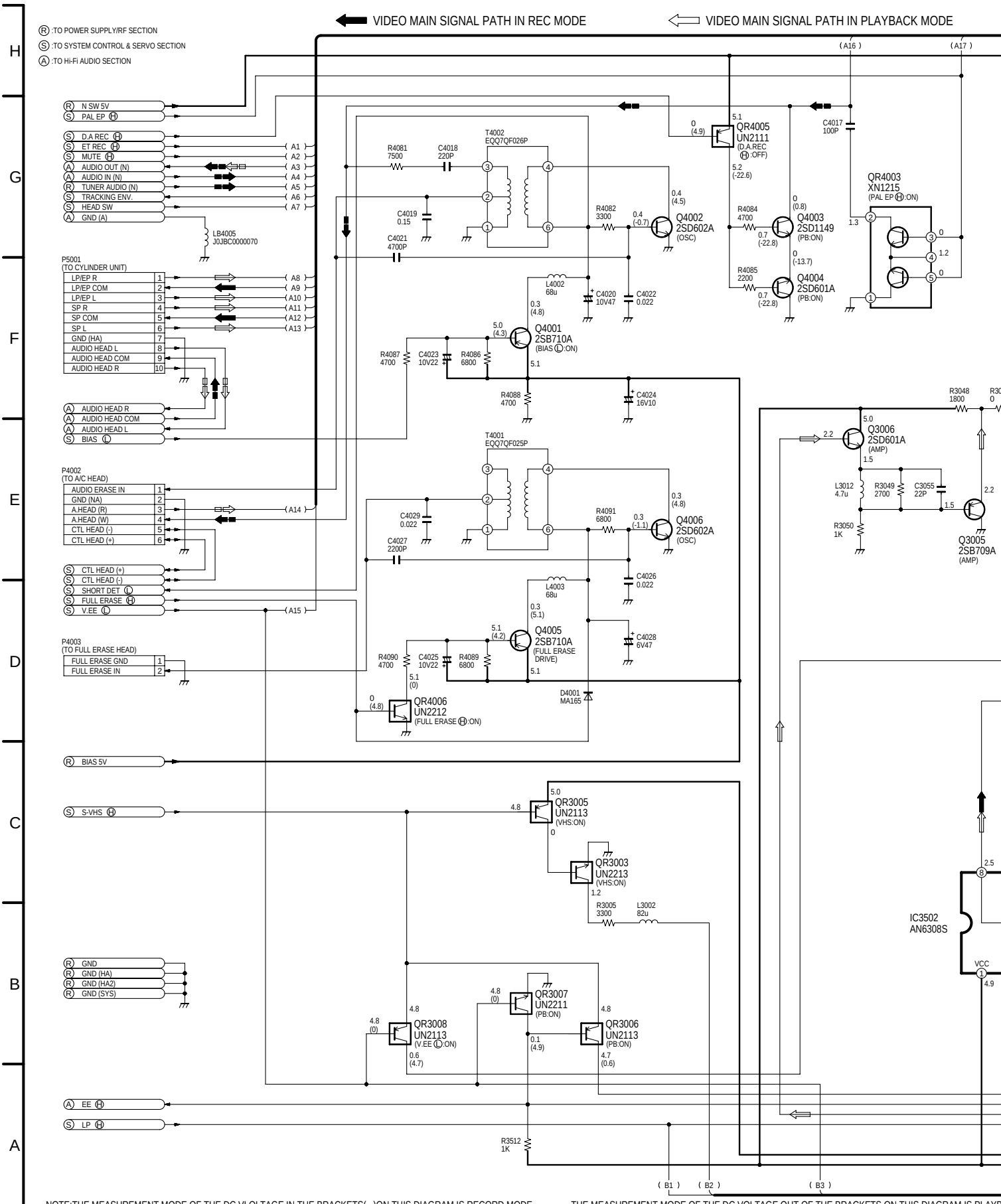
12 | 13 | 14 | 15 | 16 | 17



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM

8.5. LUMINANCE & CHROMINANCE/ AUDIO SECTION IN MAIN SCHEMATIC DIAGR

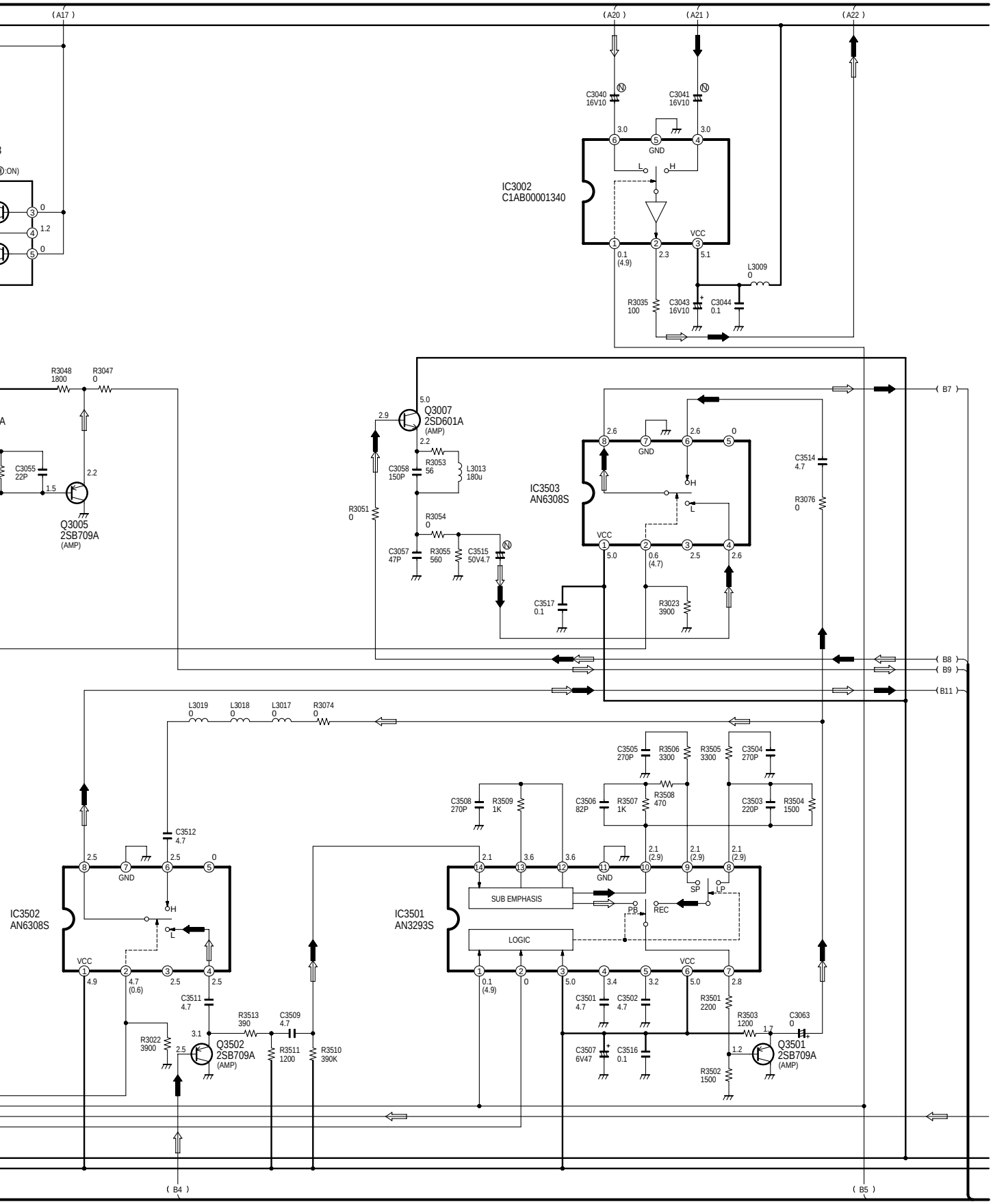


NOTE:THE MEASUREMENT MODE OF THE DC VLOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYB WITH PAL COLOUR SIGNAL.(SP MODE)

C DIAGRAM

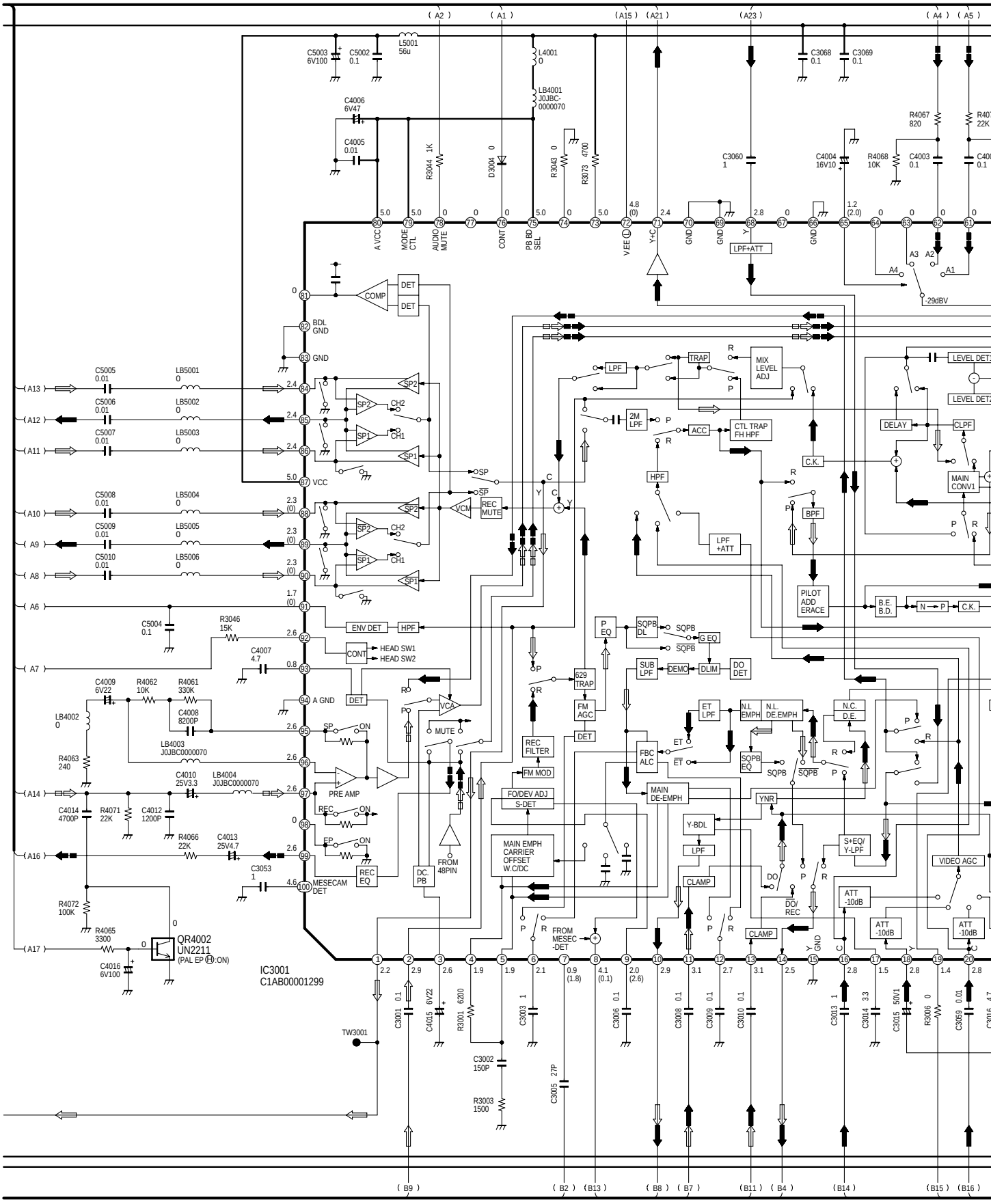
ACK MODE ◀■ AUDIO MAIN SIGNAL PATH IN REC MODE ◁□ AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



THIS DIAGRAM IS PLAYBACK MODE

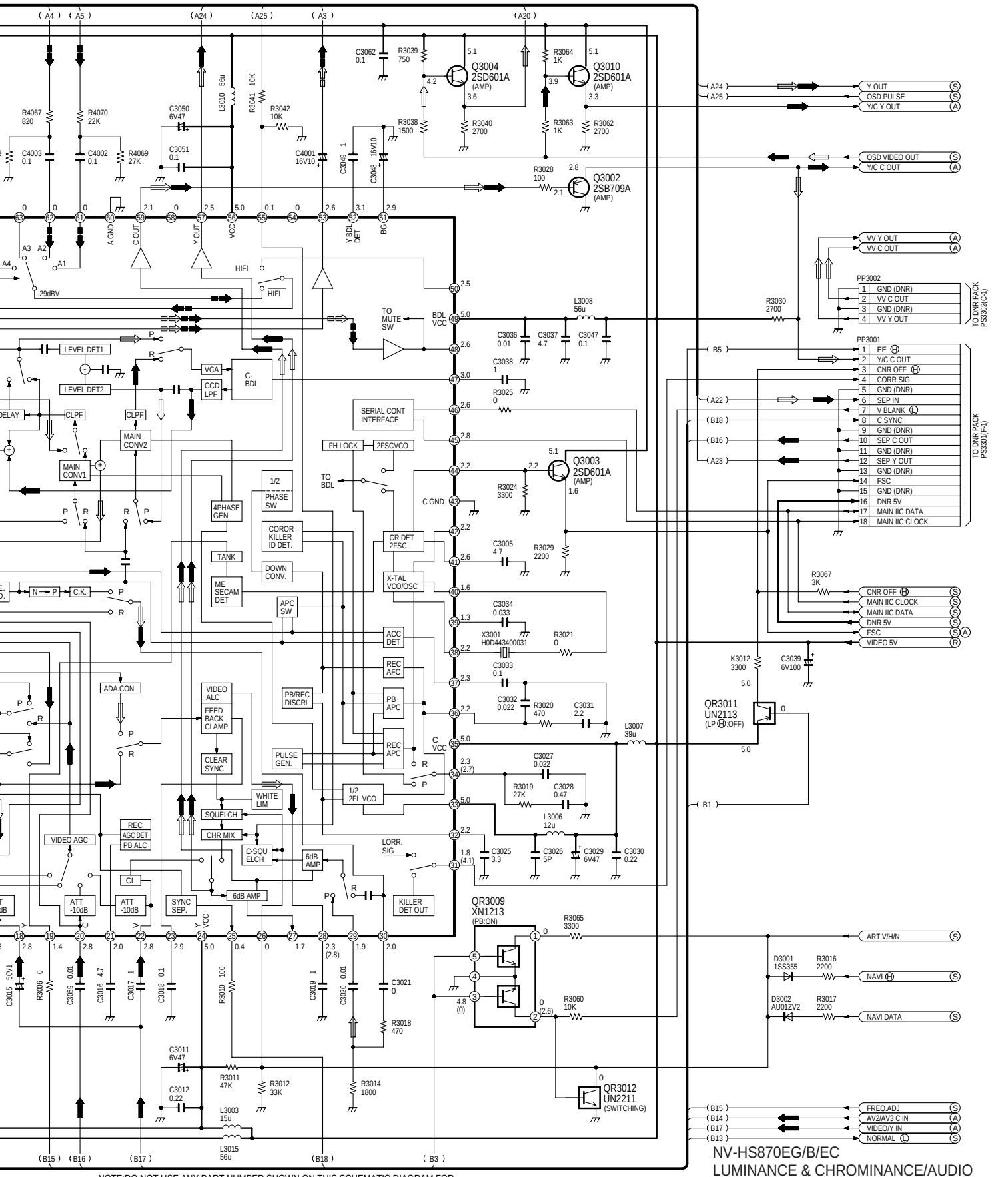
NV-HS870EG/B/EC LUMINANCE & CHROMINANCE/AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

6	7	8	9	10	11	12



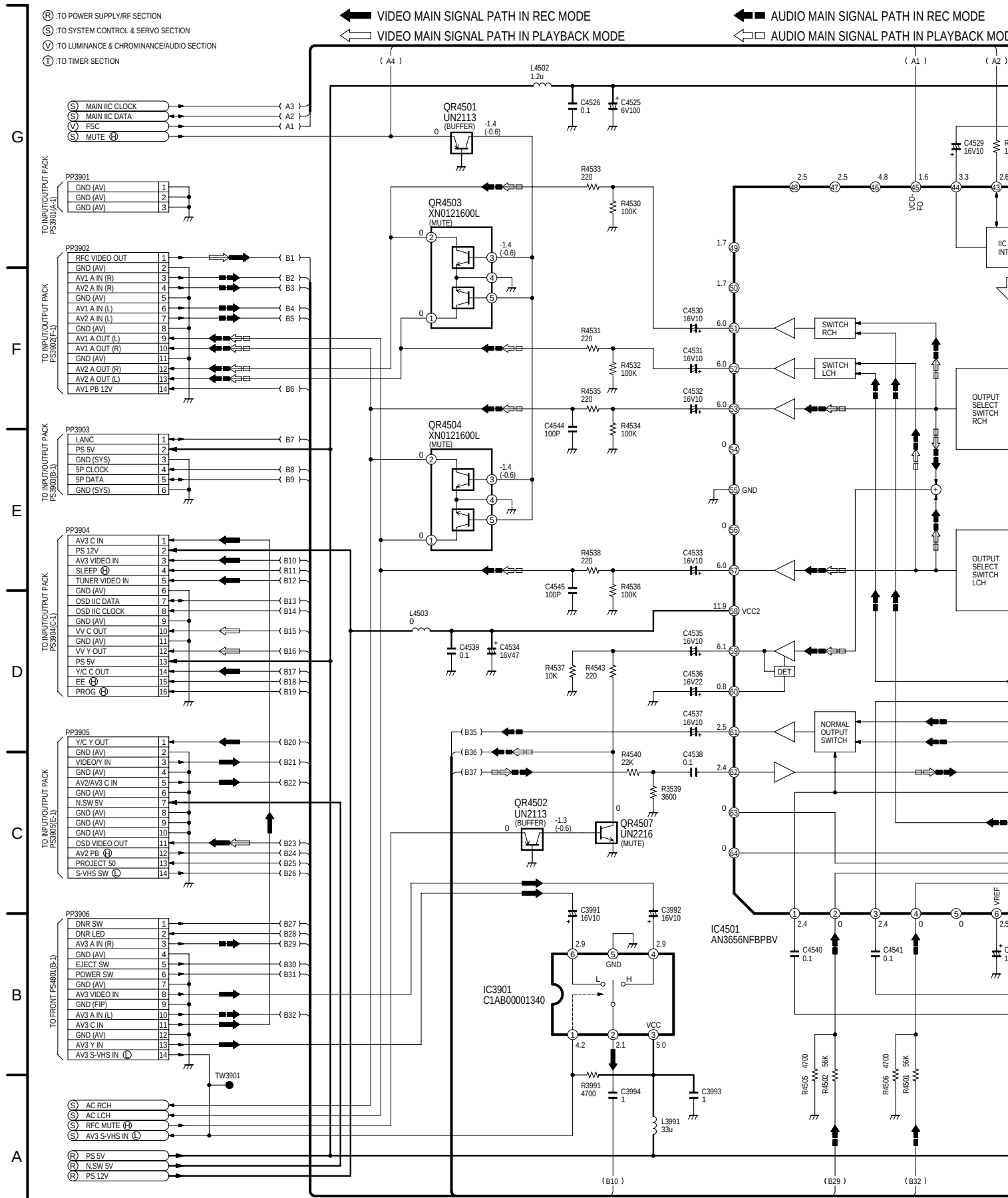
NV-HS870EG/B/EC LUMINANCE & CHROMINANCE/AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

12	13	14	15	16	17



NV-HS870EG/B/EC
LUMINANCE & CHROMINANCE/AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

8.6. Hi-Fi AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

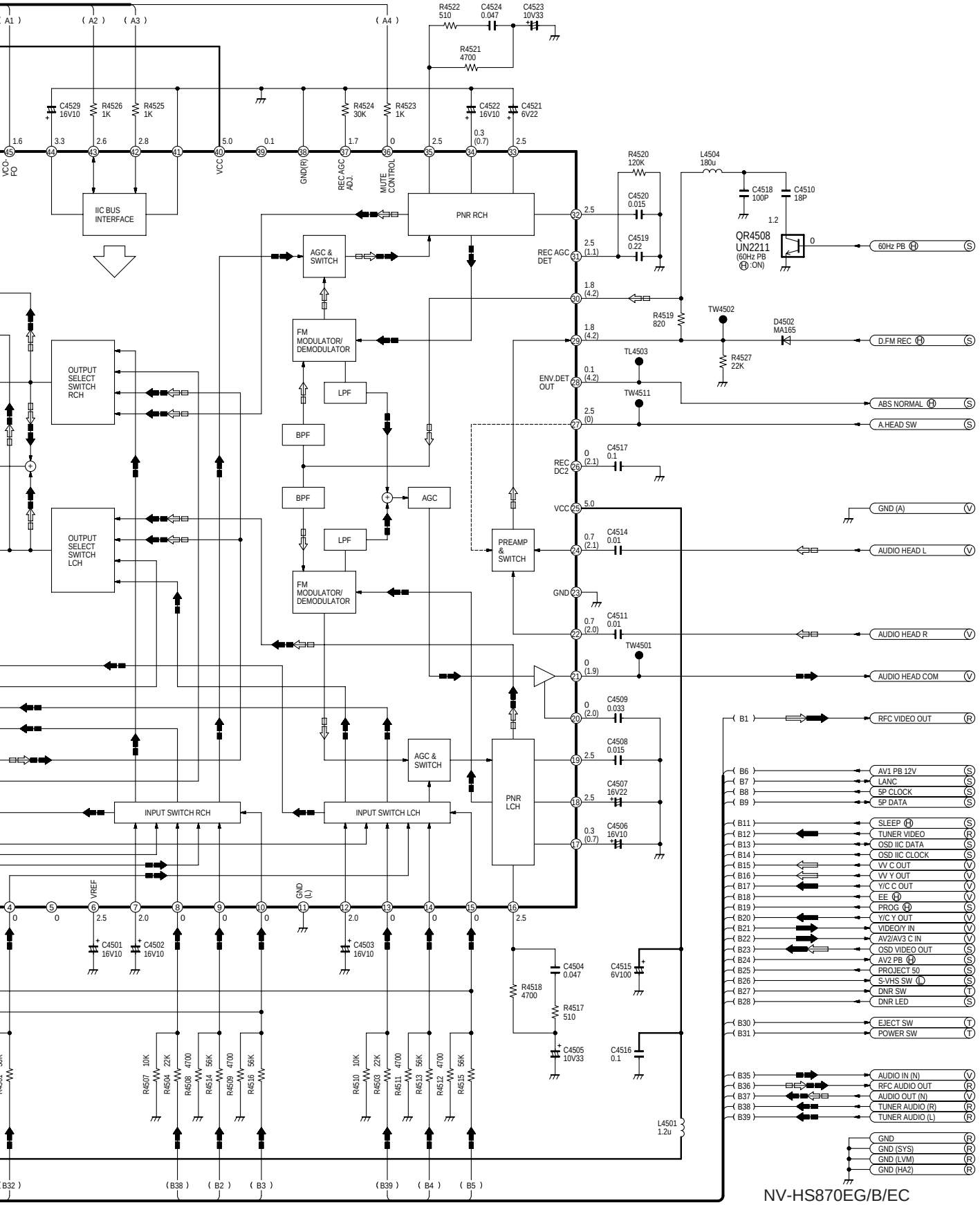


NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM WITH PAL COLOUR SIGNAL.(SP MODE)

H IN REC MODE

H IN PLAYBACK MODE



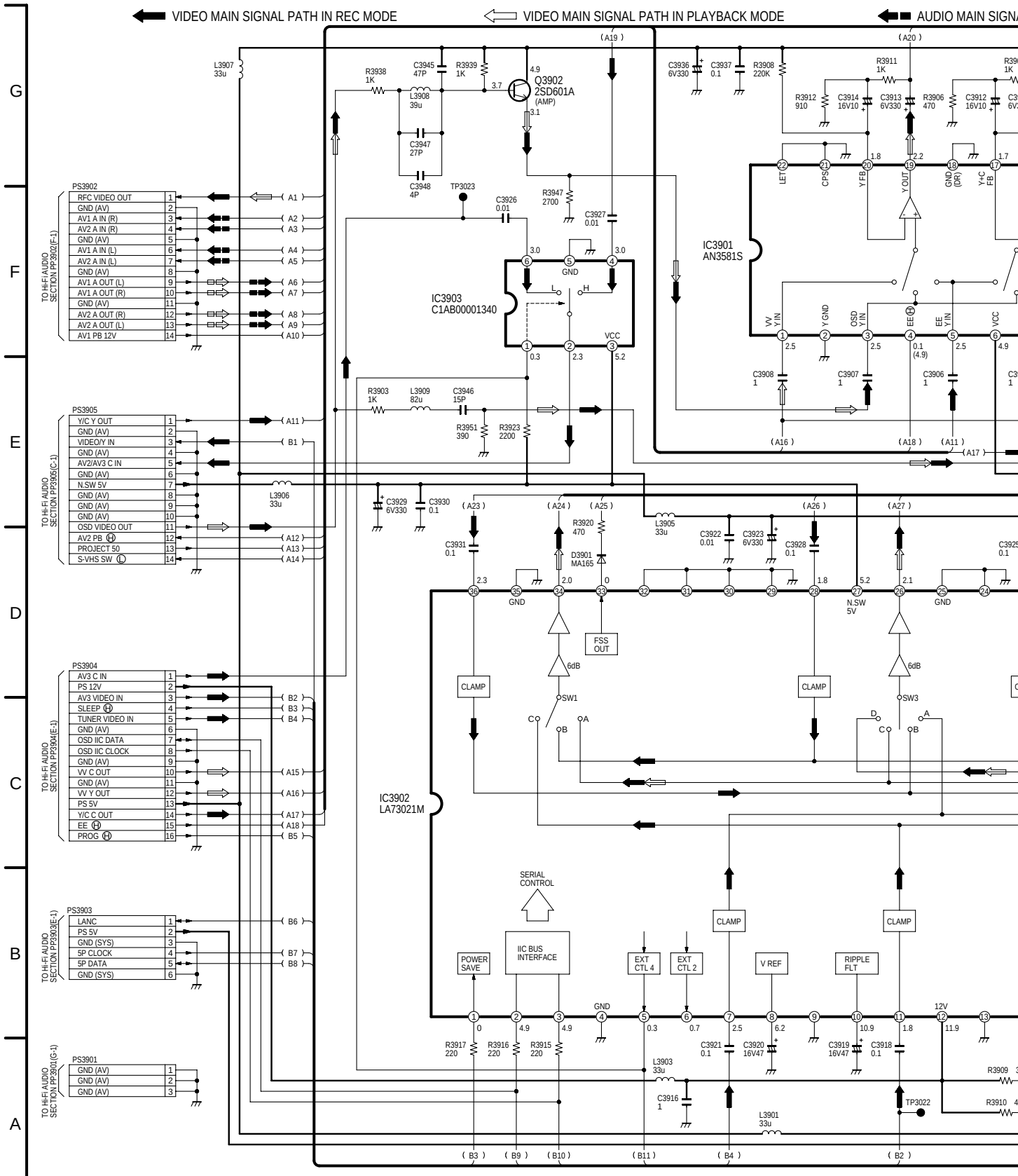
KETS ON THIS DIAGRAM IS PLAYBACK MODE

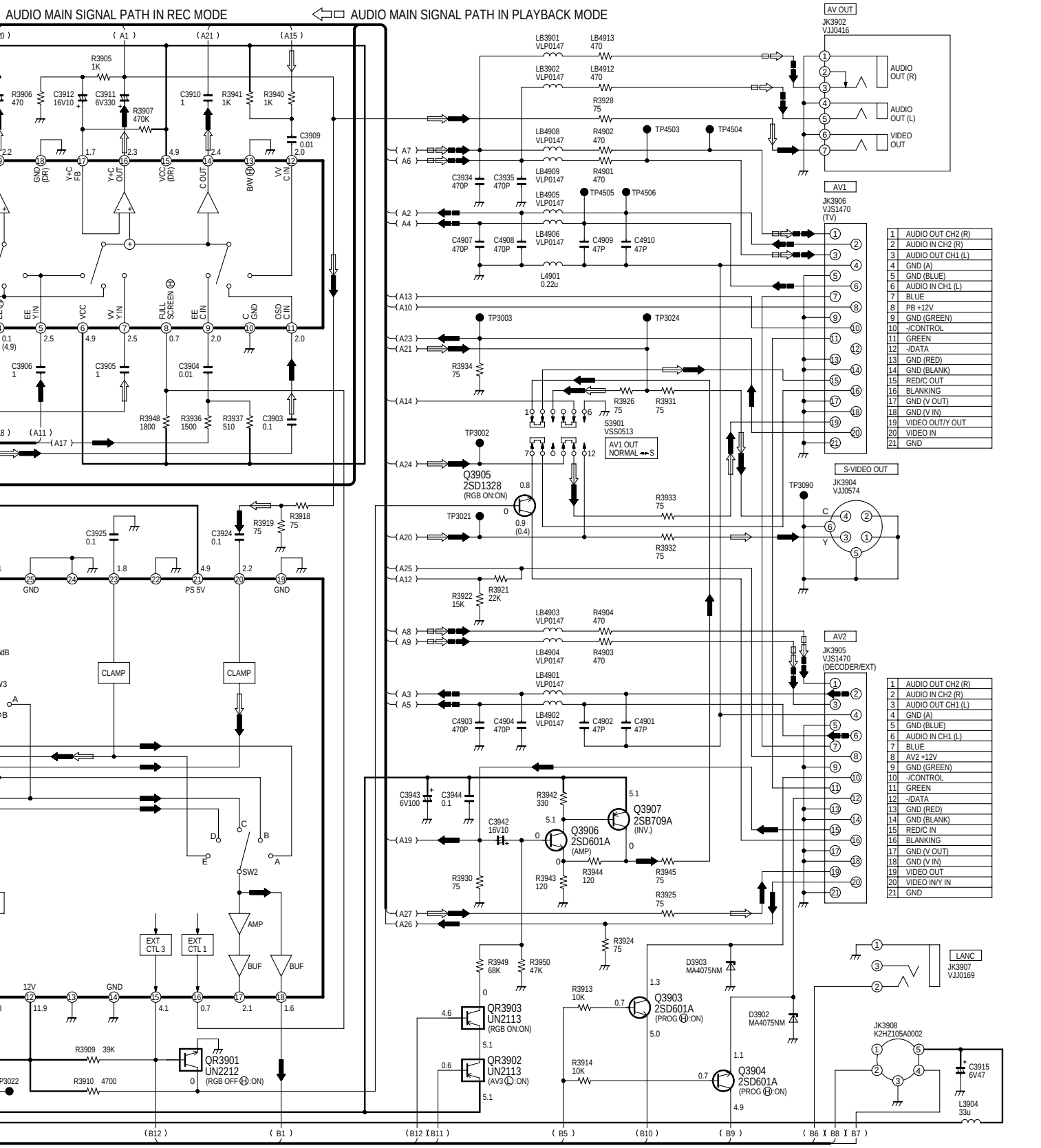
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
Hi-Fi AUDIO SECTION IN
MAIN SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11

8.7. INPUT/ OUTPUT PACK SCHEMATIC DIAGRAM


VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNA
IC3901 AN3581S
IC3903 C1AB00001340
IC3902 LA73021M
Q3902 2SD601A (AMP)
PS3902
PS3905
PS3904
PS3903
PS3901
TO Hi-Fi AUDIO SECTION PP3902(F-1)
TO Hi-Fi AUDIO SECTION PP3905(C-1)
TO Hi-Fi AUDIO SECTION PP3904(E-1)
TO Hi-Fi AUDIO SECTION PP3903(E-1)
TO Hi-Fi AUDIO SECTION PP3901(G-1)
CLAMP
SERIAL CONTROL
IIC BUS INTERFACE
POWER SAVE
FSS OUT
EXT CTL 4
EXT CTL 2
V REF
RIPPLE FLT
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS WITH PAL COLOUR SIGNAL.(SP MODE)



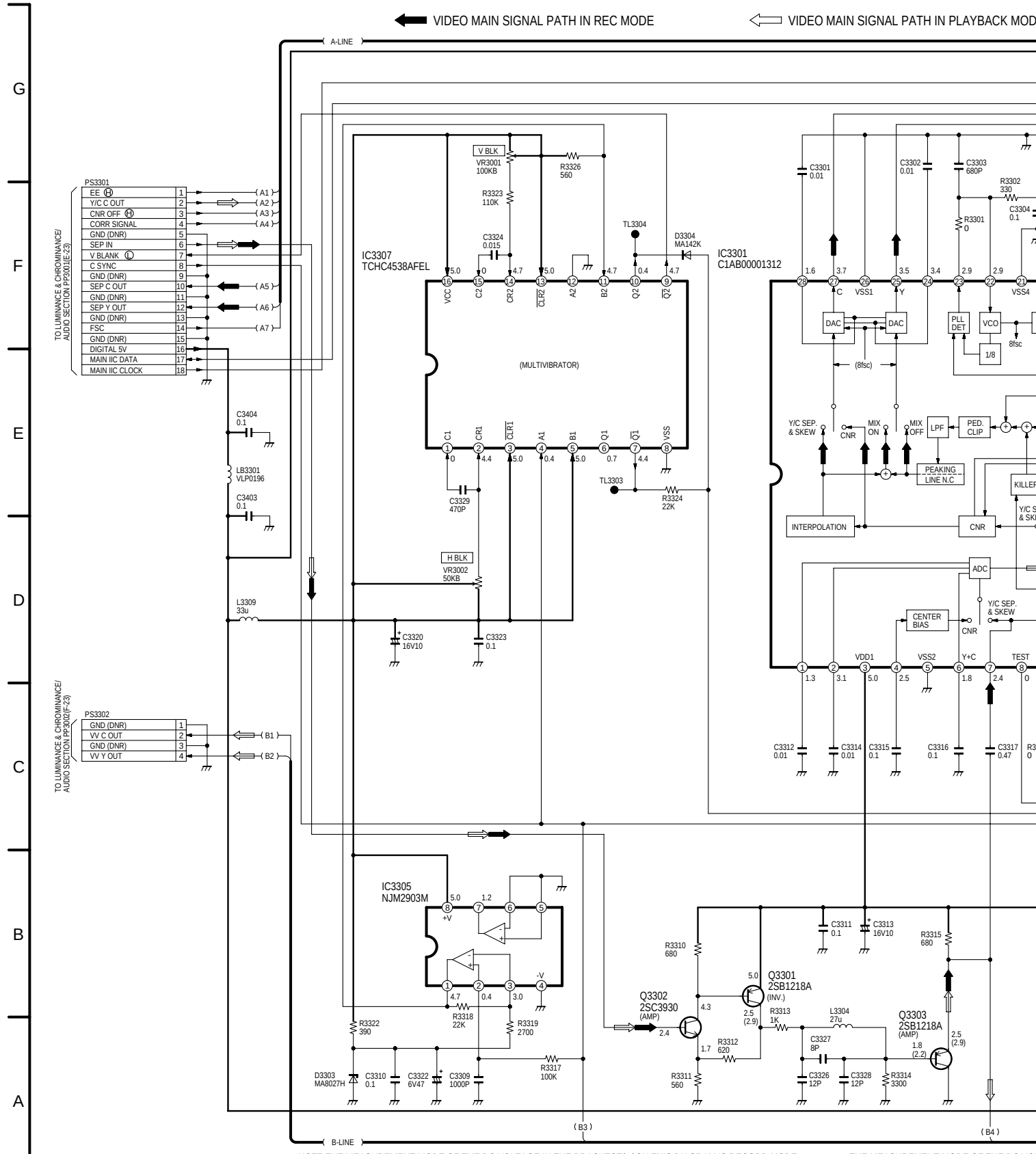
TS ON THIS DIAGRAM IS PLAYBACK MODE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
INPUT/OUTPUT PACK SCHEMATIC DIAGRAM

6	7	8	9	10	11

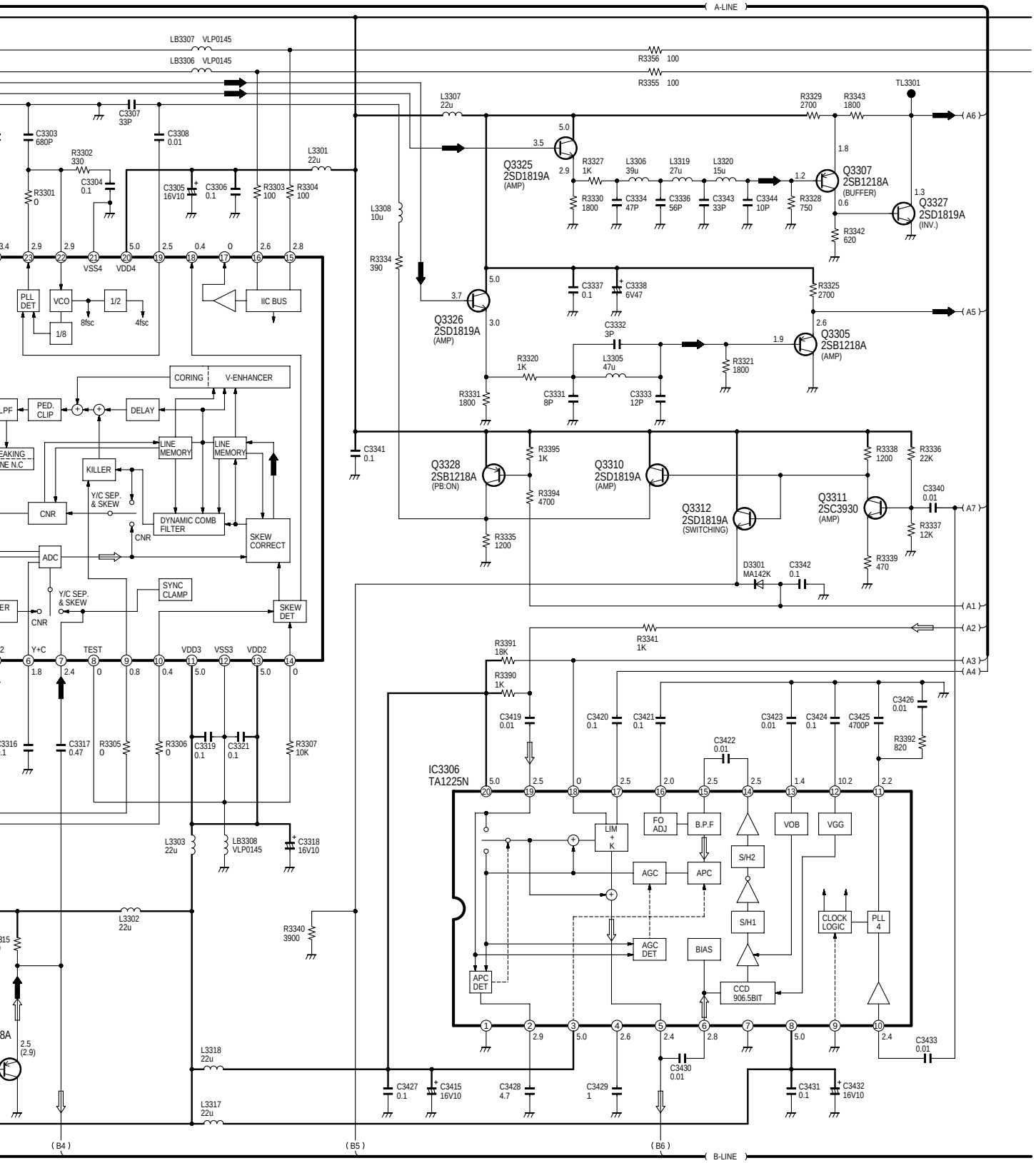
8.8. DNR PACK SCHEMATIC DIAGRAM



NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKEST( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)

THE MEASUREMENT MODE OF THE DC VO WITH PAL COLOUR SIGNAL.(SP MODE)

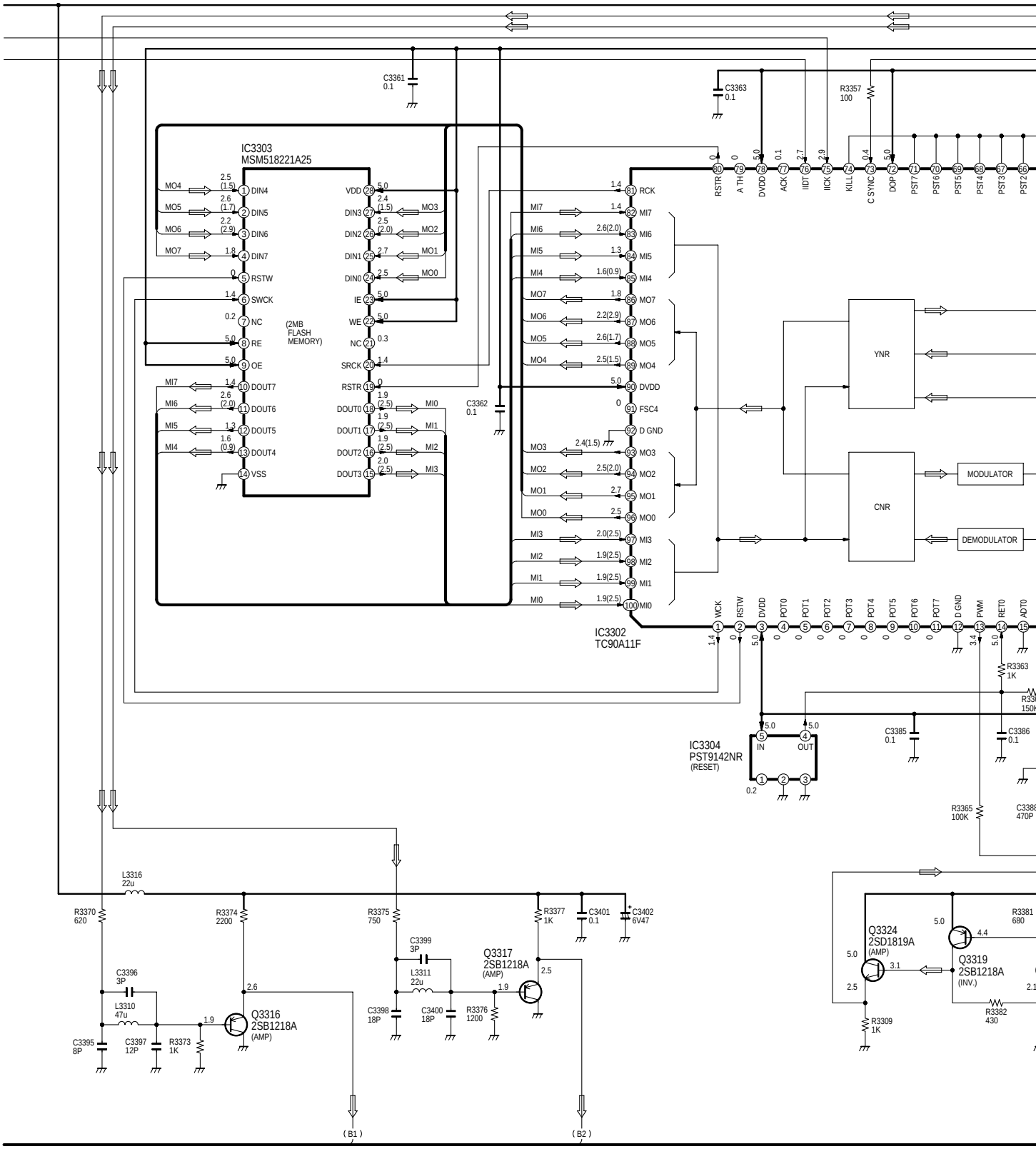
IN PLAYBACK MODE



IT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE
R SIGNAL.(SP MODE)

NV-HS870EG/B/EC DNR PACK SCHEMATIC DIAGRAM

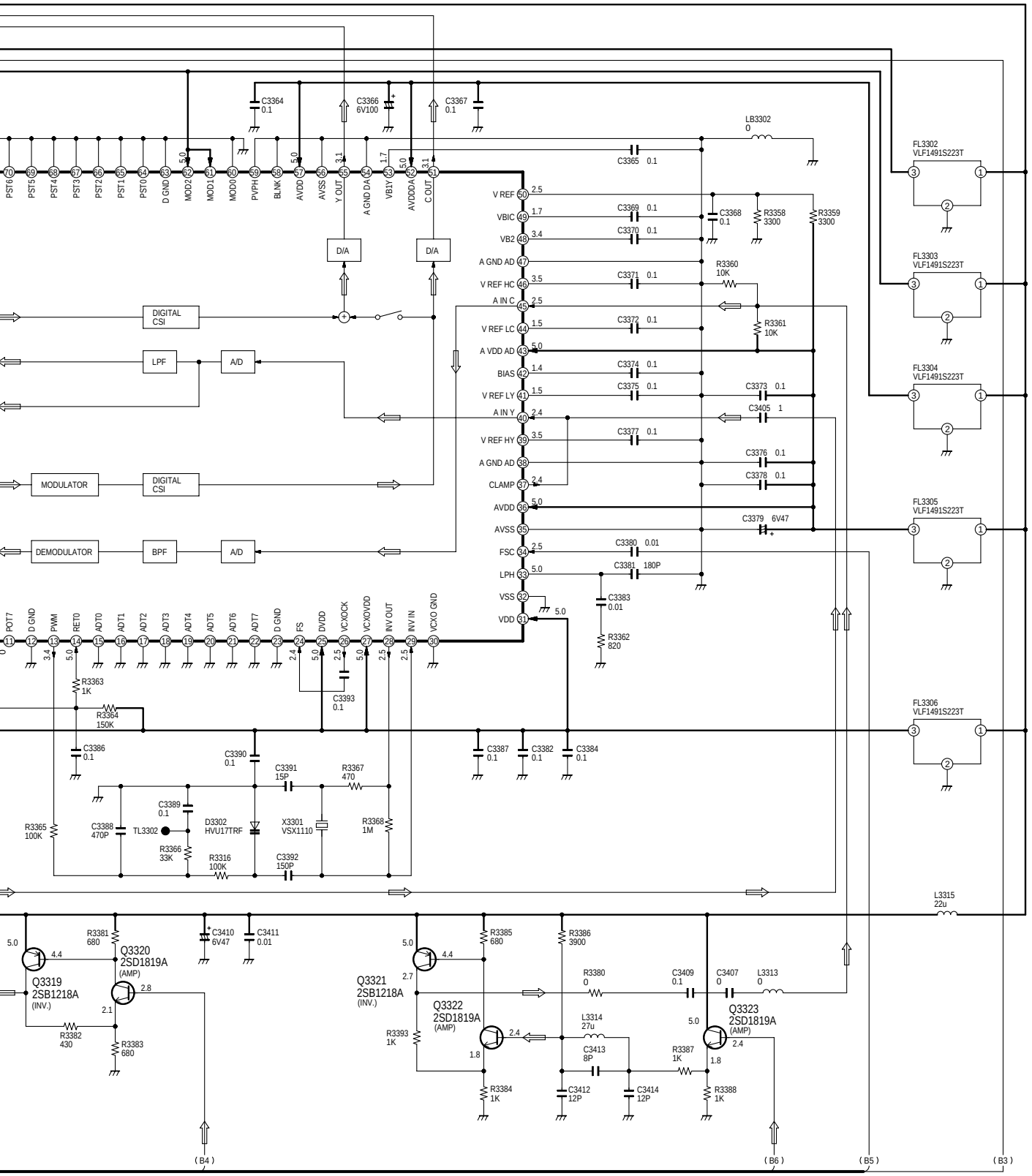
6 | 7 | 8 | 9 | 10 | 11



NV-HS870EG/B/EC DNR PACK SCHEMATIC DIAGRAM

NOTE:DO NOT ANY PART NUMBER SHOWN ON THIS SCHEM
ORDERING.WHEN YOU ORDER A PART,PLEASE REFE

12 | 13 | 14 | 15 | 16 | 17

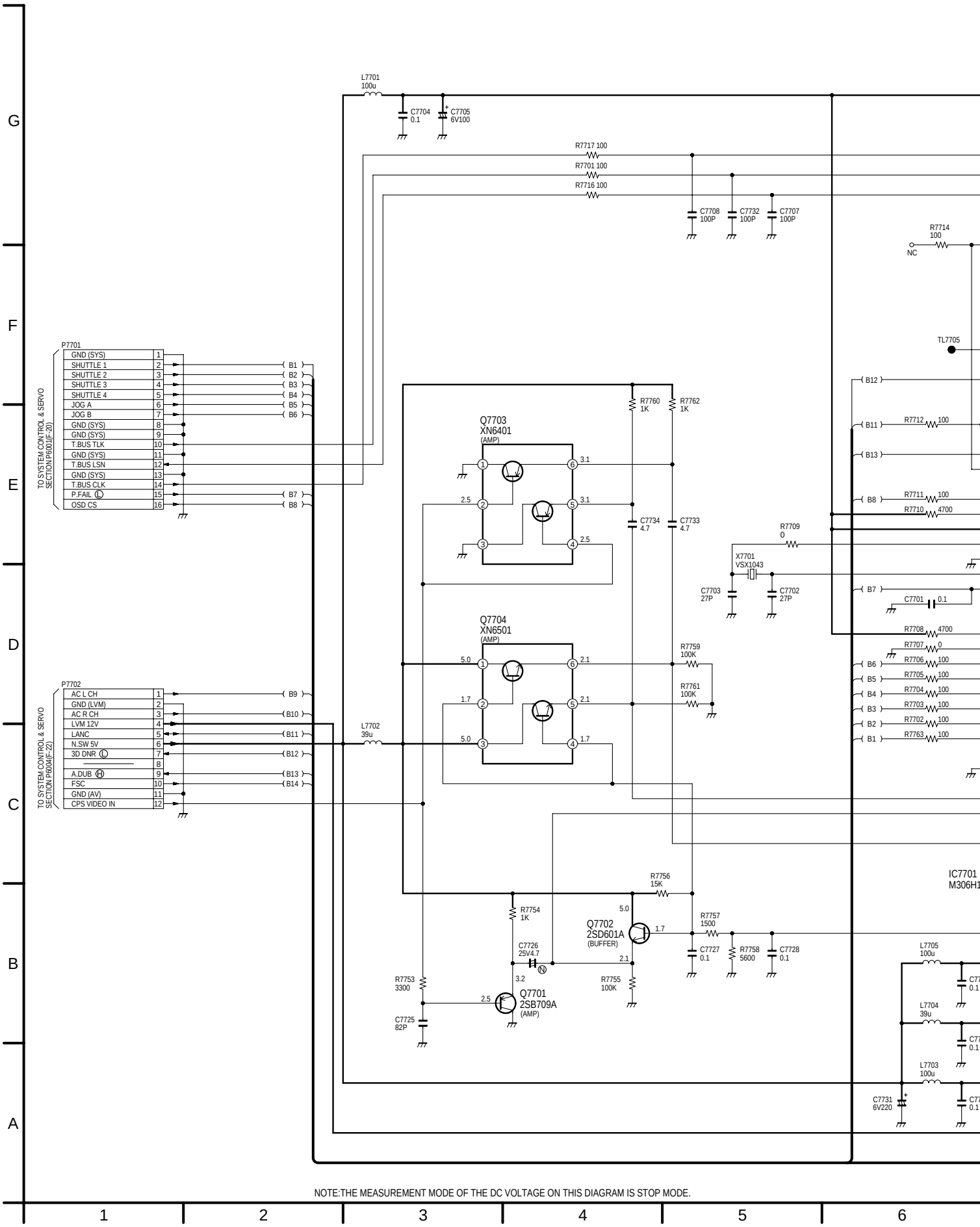


SHOWN ON THIS SCHEMATIC DIAGRAM FOR
ER A PART,PLEASE REFER TO PARTS LIST.

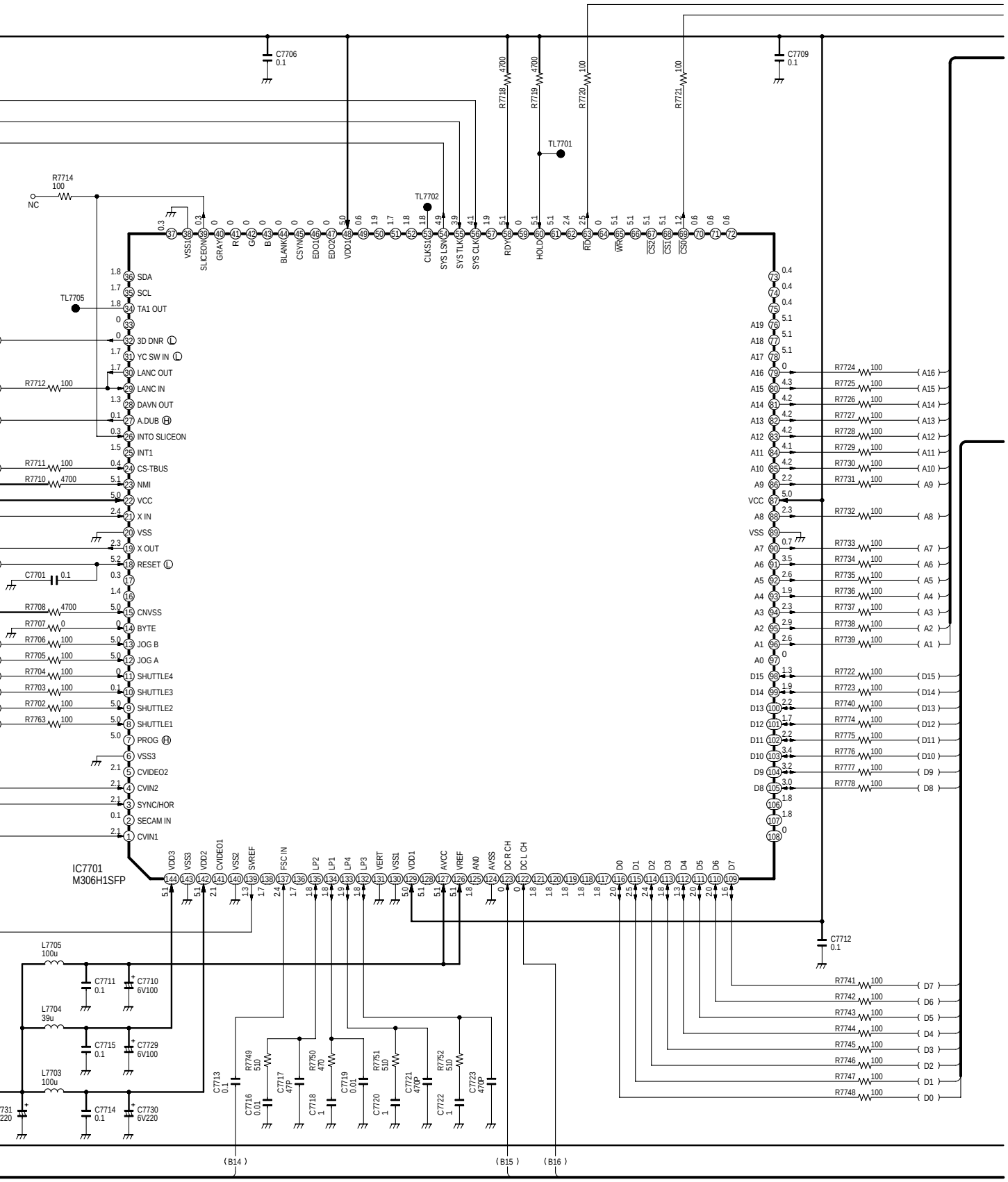
NV-HS870EG/B/EC DNR PACK SCHEMATIC DIAGRAM

17	18	19	20	21	22

8.9. OSD/SECAM SCHEMATIC DIAGRAM



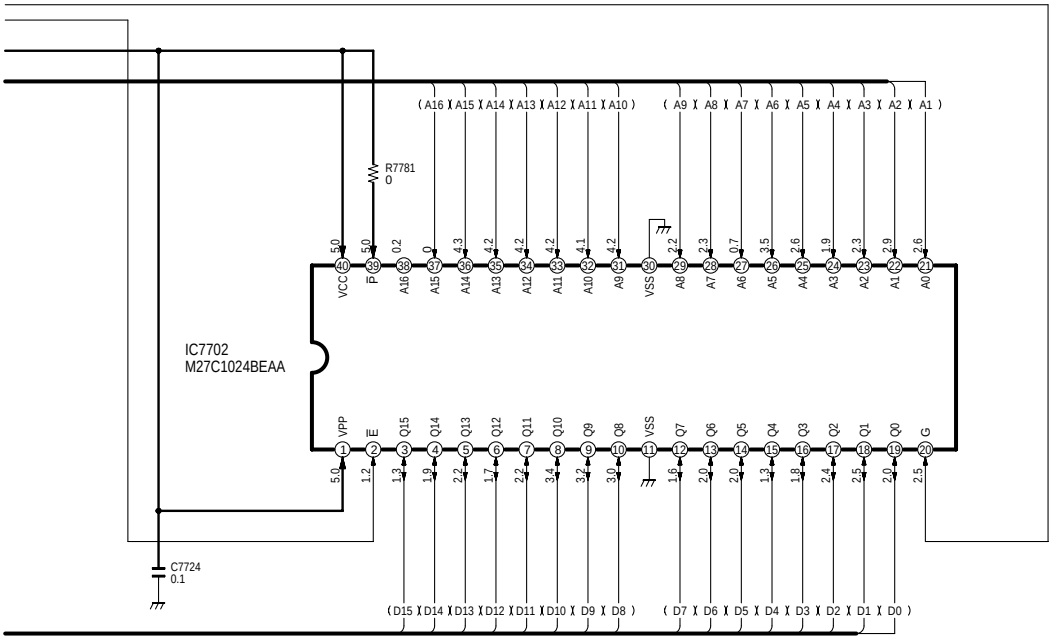
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

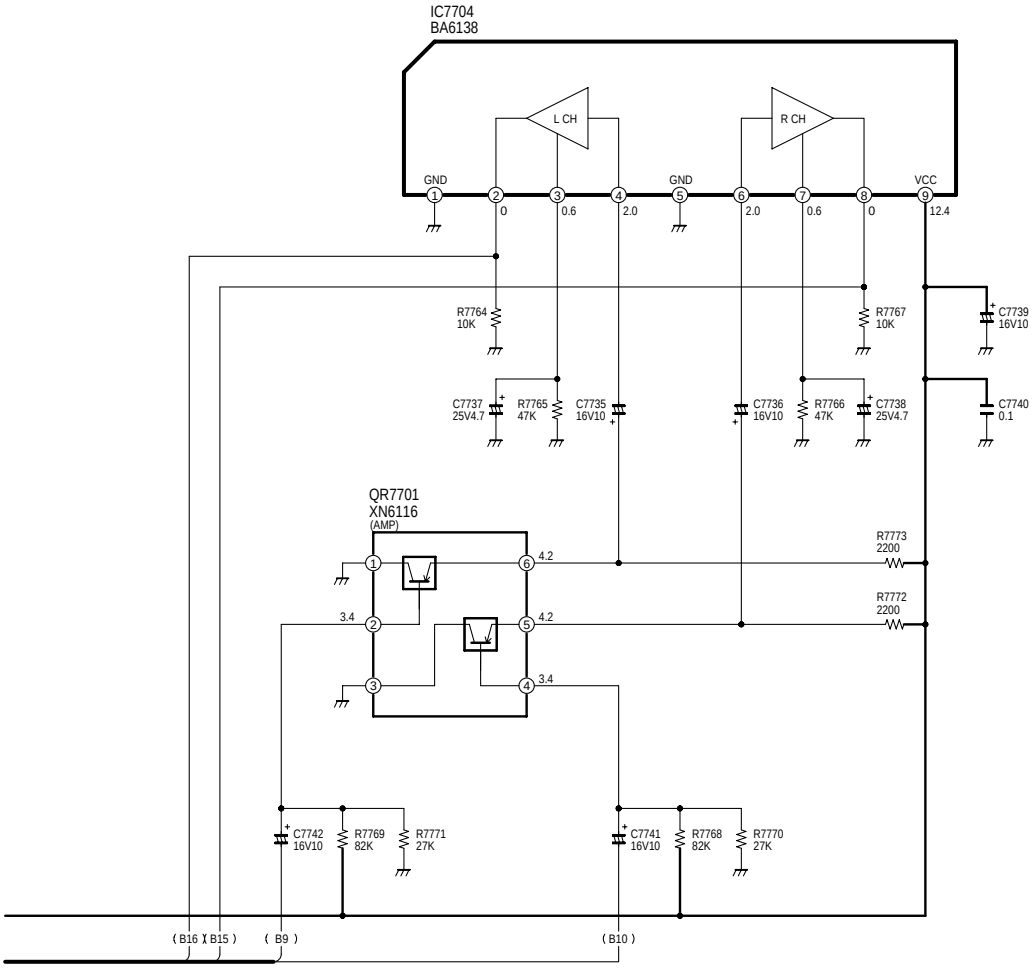


NOTE:DO NOT USE PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLESE REFER TO PARTS LIST.

NV-HS870EG/B/EC OSD/SECAM SCHEMATIC DIAGRAM

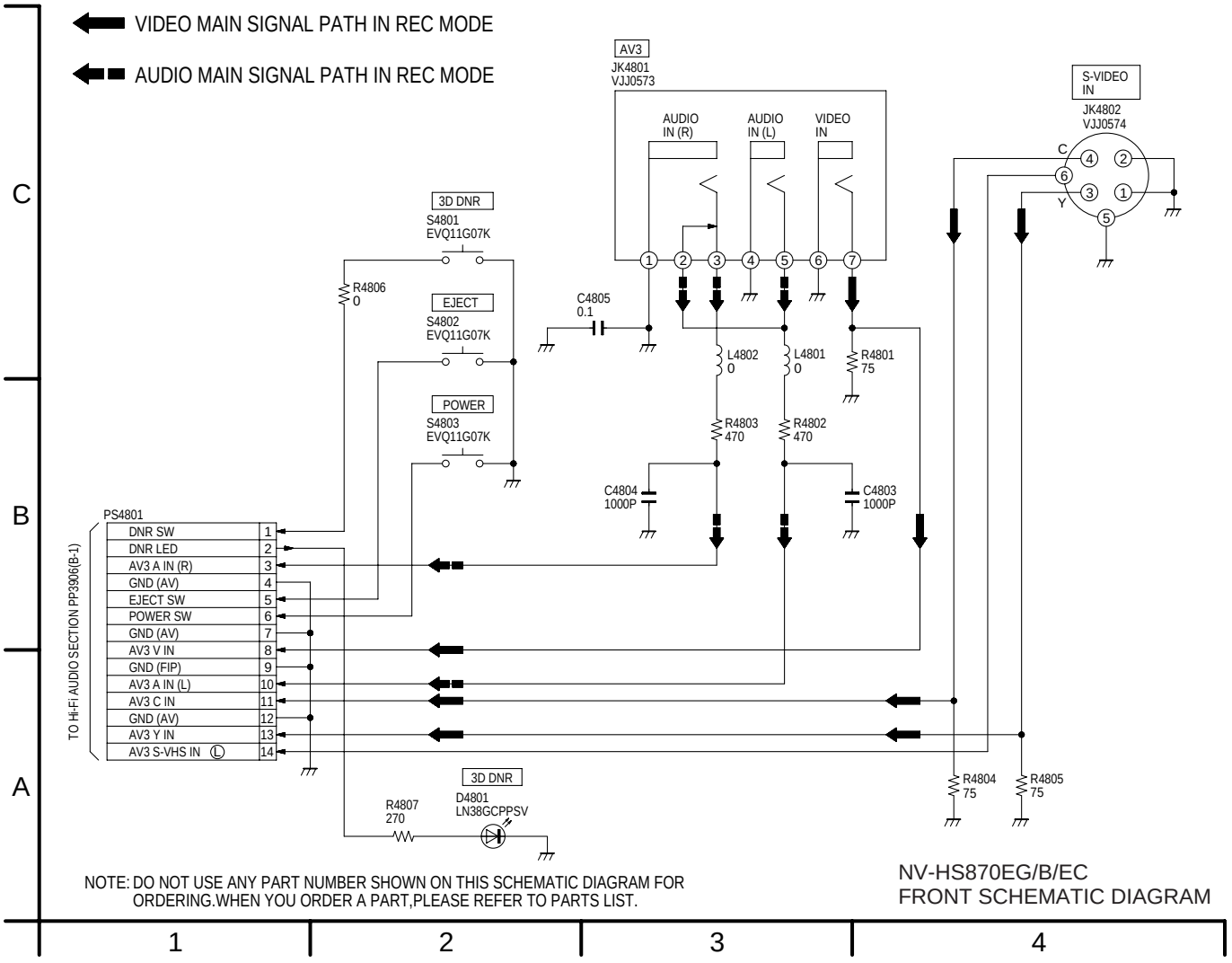
6 | 7 | 8 | 9 | 10 | 11


IC7702
M27C1024BEAA
R7781
0
C7724
0.1
(A16 X A15 X A14 X A13 X A12 X A11 X A10)
(A9 X A8 X A7 X A6 X A5 X A4 X A3 X A2 X A1)
(D15 X D14 X D13 X D12 X D11 X D10 X D9 X D8)
(D7 X D6 X D5 X D4 X D3 X D2 X D1 X D0)

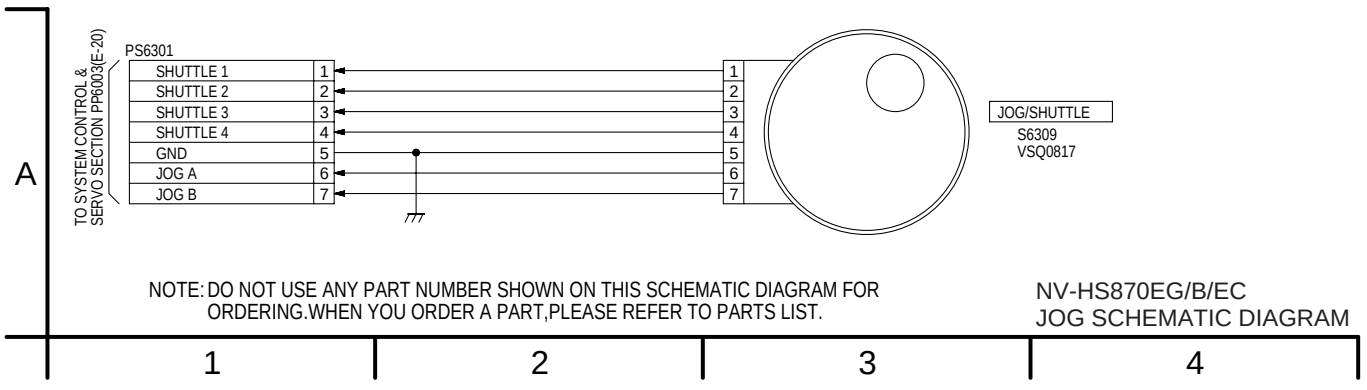


NV-HS870EG/B/EC OSD/SECAM SCHEMATIC DIAGRAM

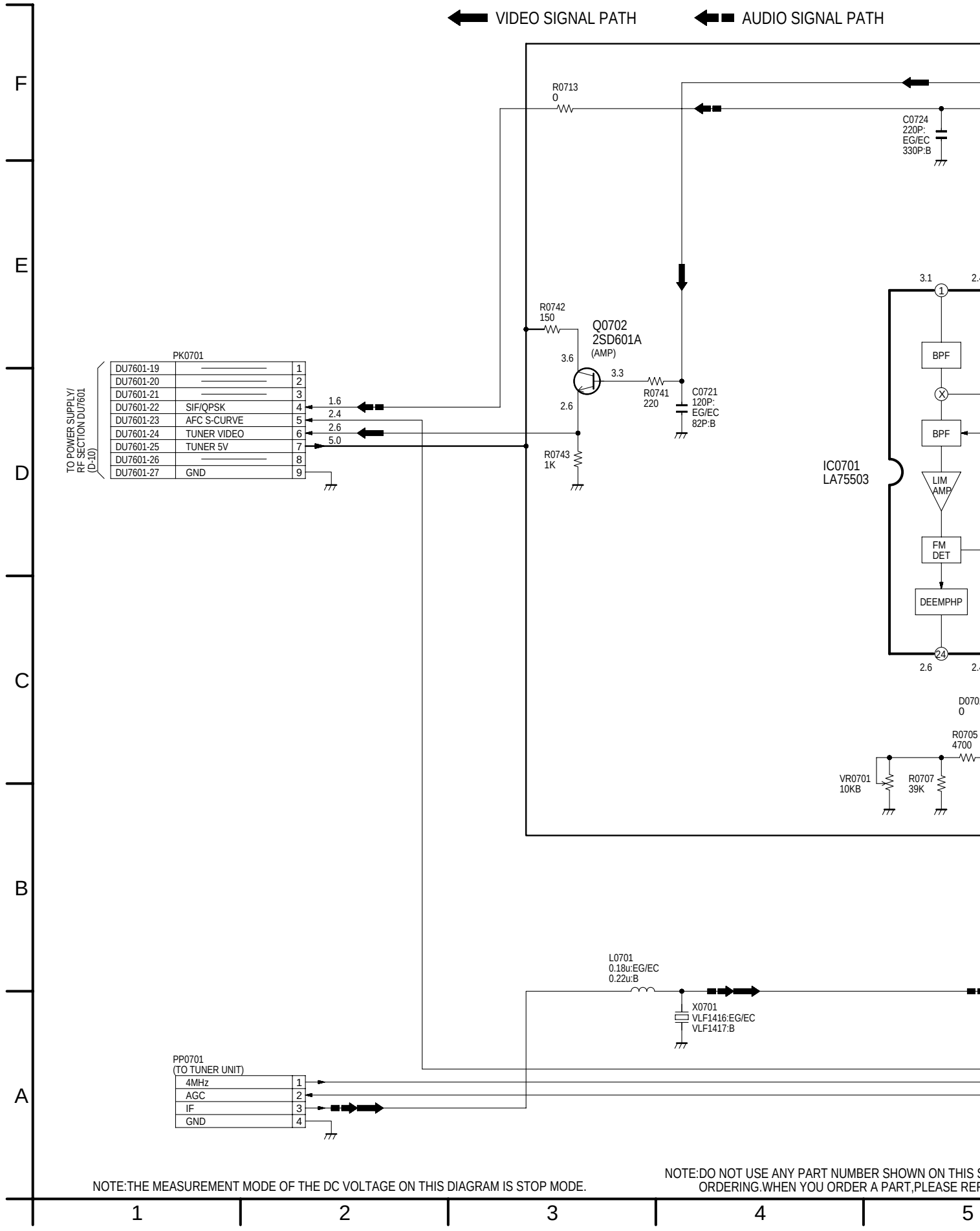
8.10. FRONT SCHEMATIC DIAGRAM

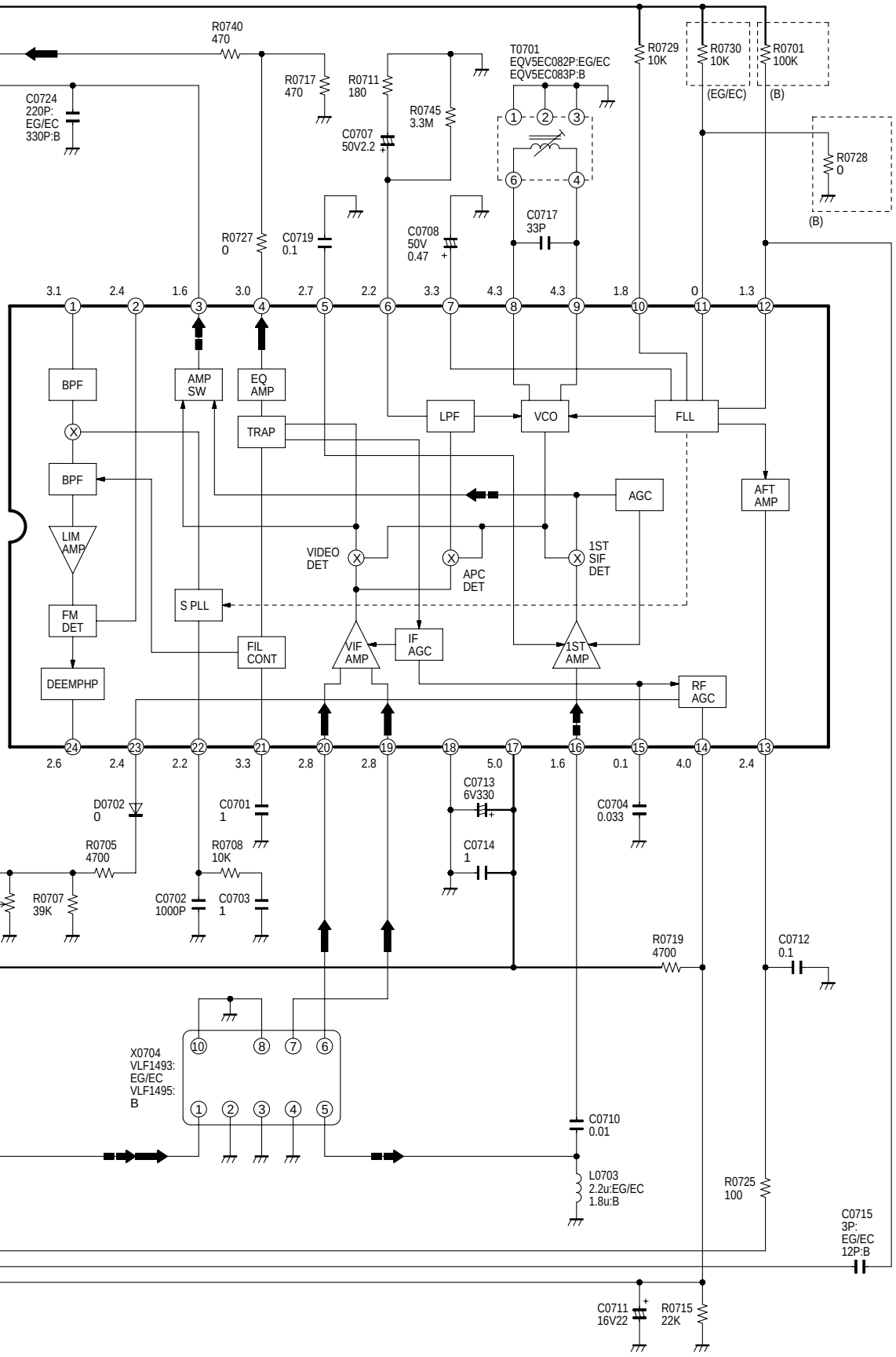


8.11. JOG SCHEMATIC DIAGRAM



8.12. TV DEMODULATOR PACK SCHEMATIC DIAGRAM



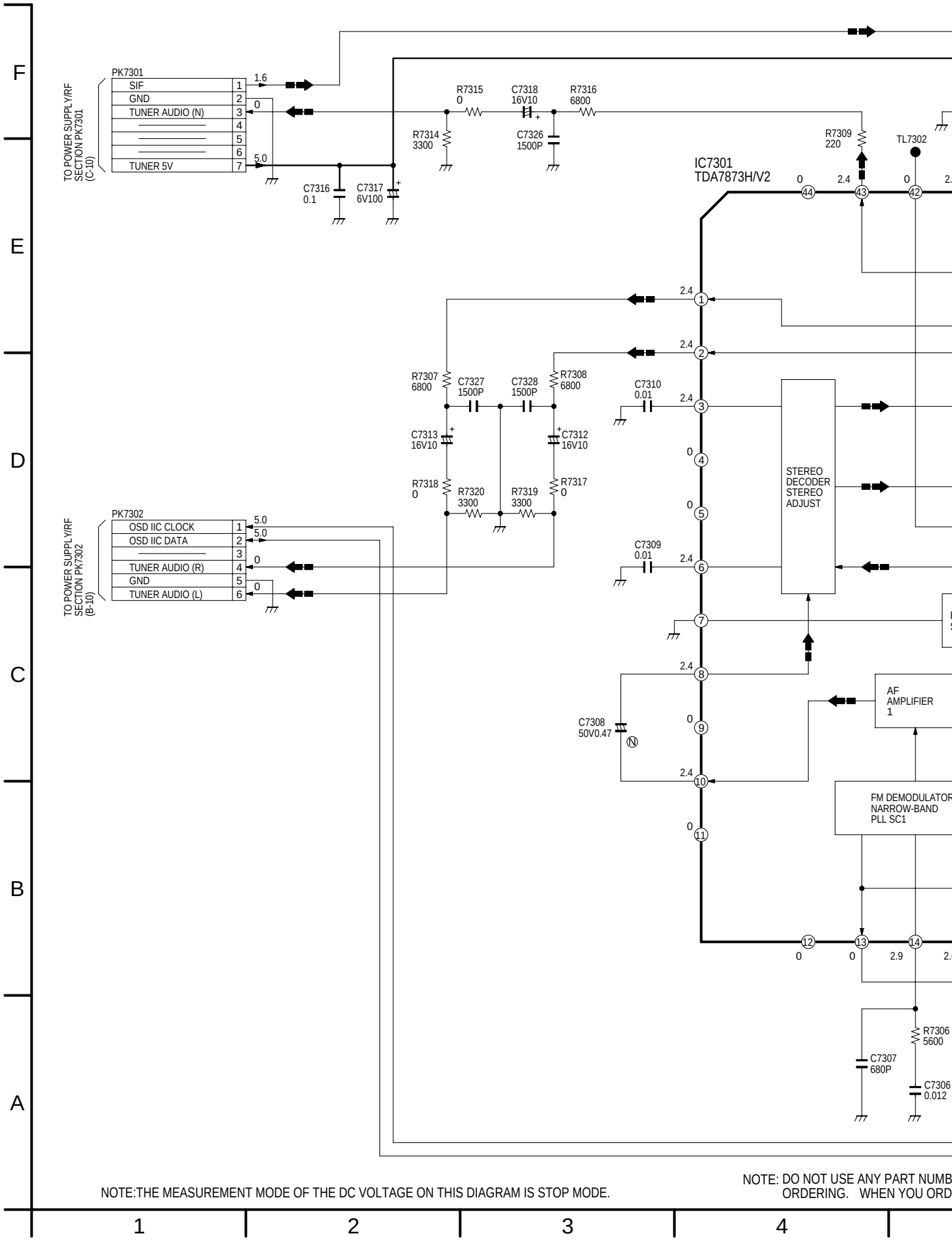


SHOWN ON THIS SCHEMATIC DIAGRAM FOR
PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
TV DEMODURATOR PACK SCHEMATIC DIAGRAM

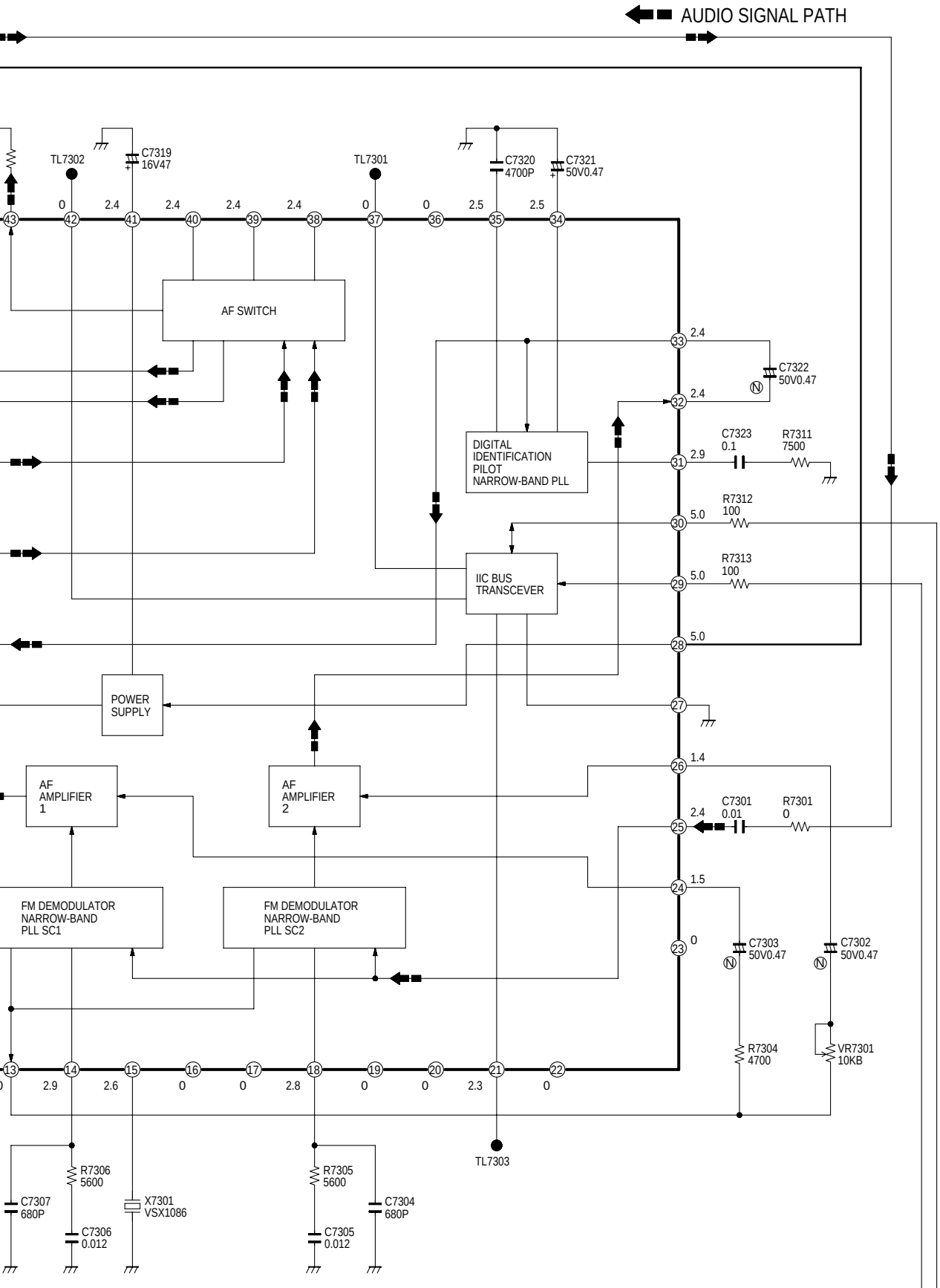
5	6	7	8

8.13. DECODER PACK SCHEMATIC DIAGRAM (NV-HS870EG)



NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMB
ORDERING. WHEN YOU ORD

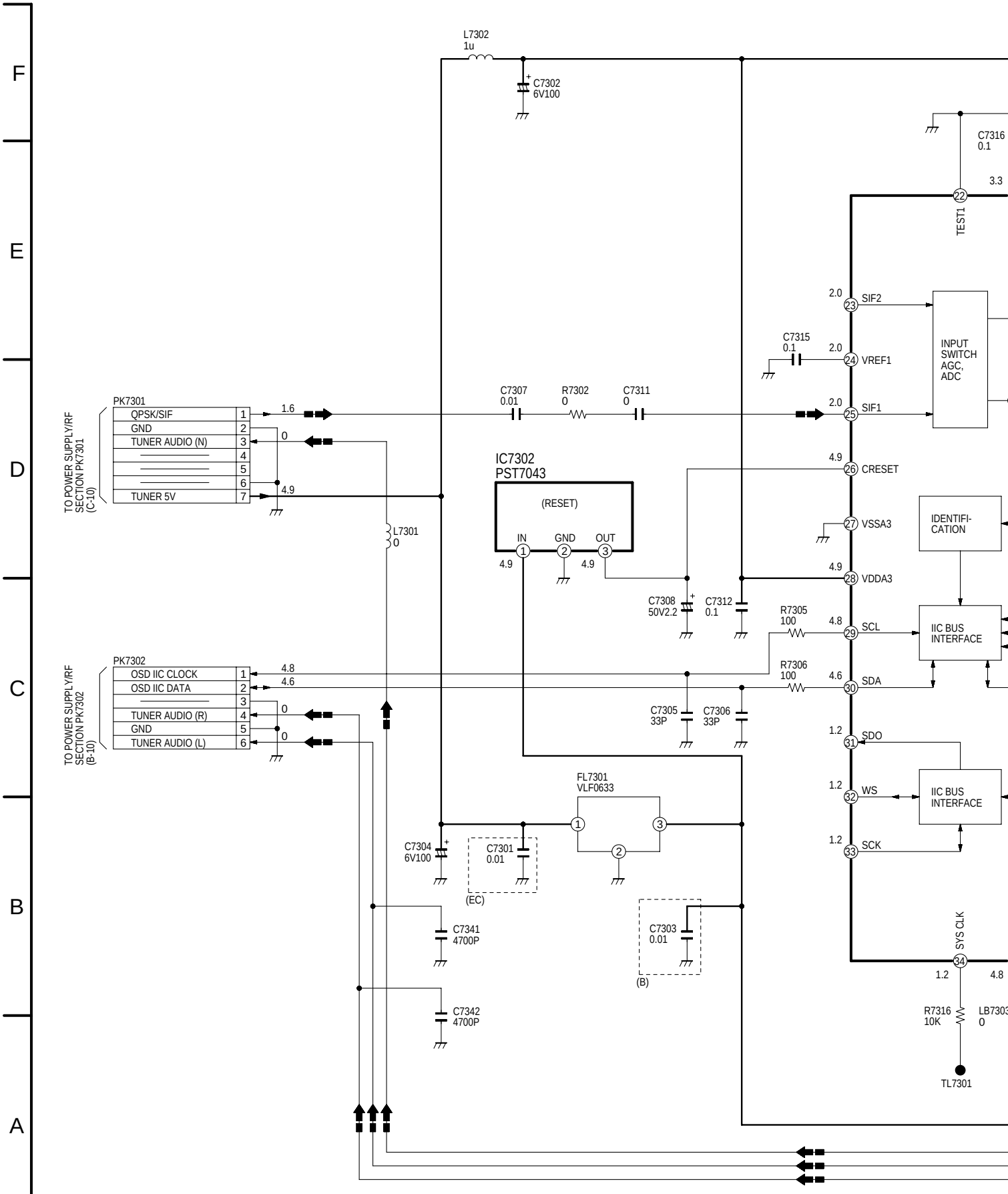


E ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG
DECODER PACK SCHEMATIC DIAGRAM

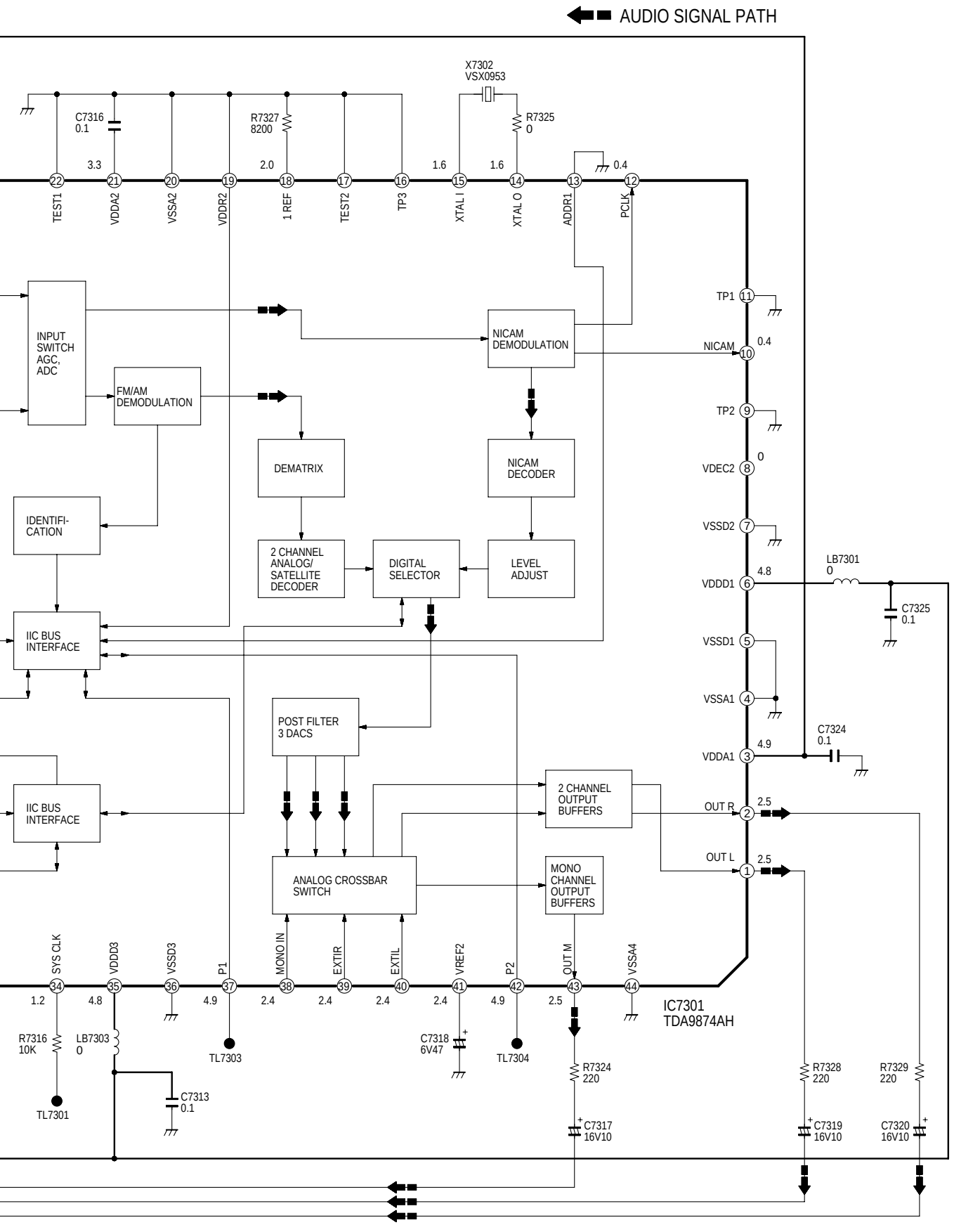
5 6 7 8

8.14. NICAM DECODER PACK SCHEMATIC DIAGRAM (NV-HS870B/EC)



NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUM
ORDERING. WHEN YOU OR

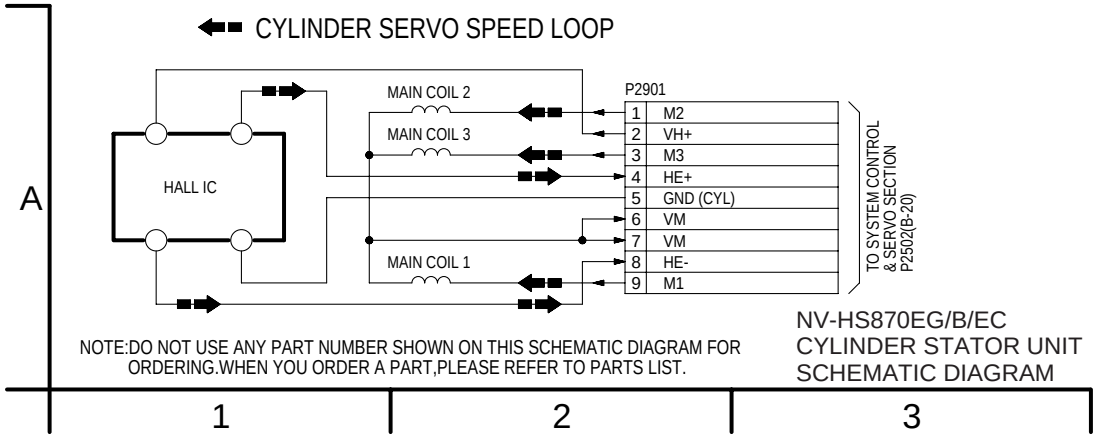


E ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

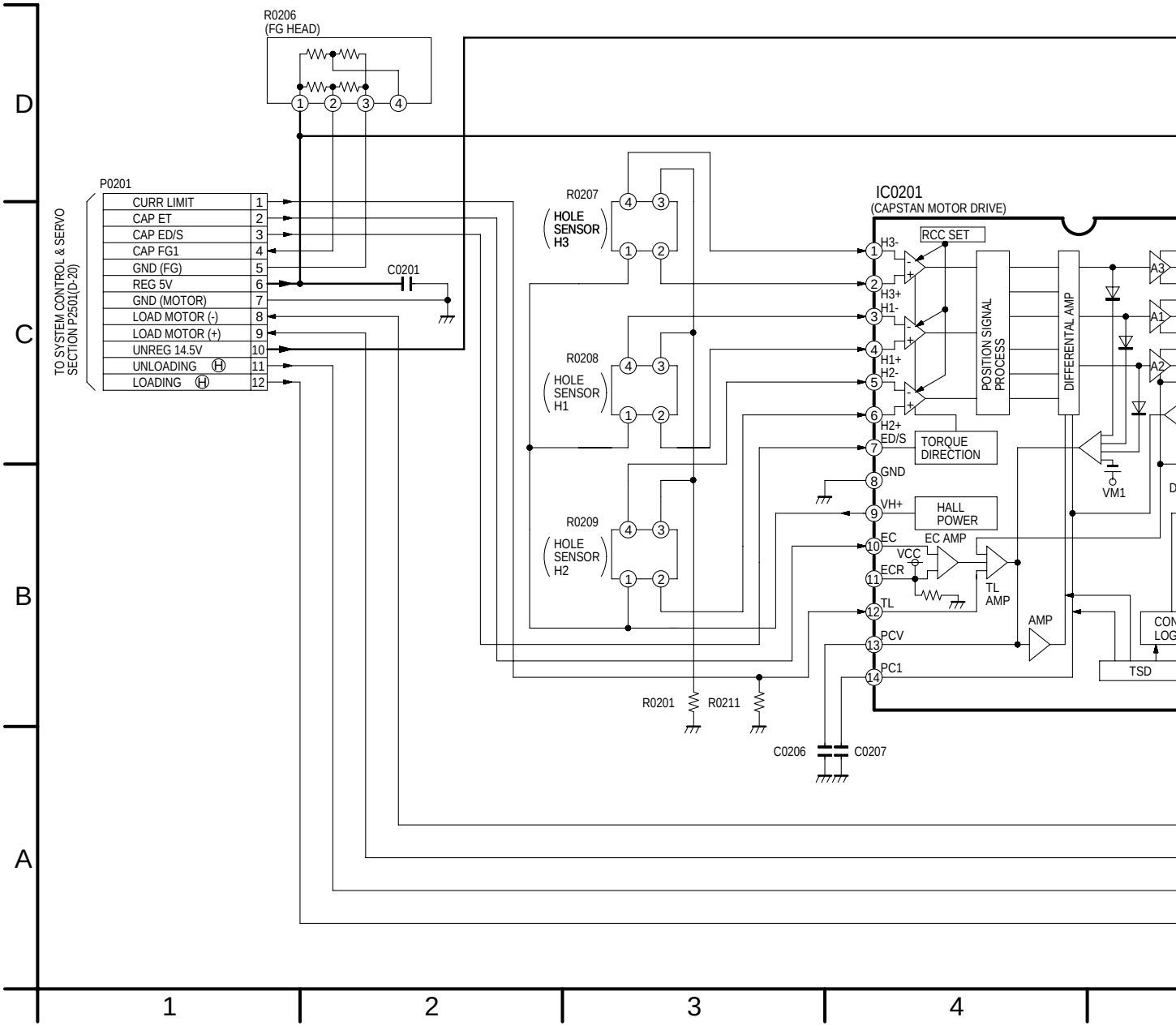
NV-HS870B/EC
NICAM DECODER PACK SCHEMATIC DIAGRAM

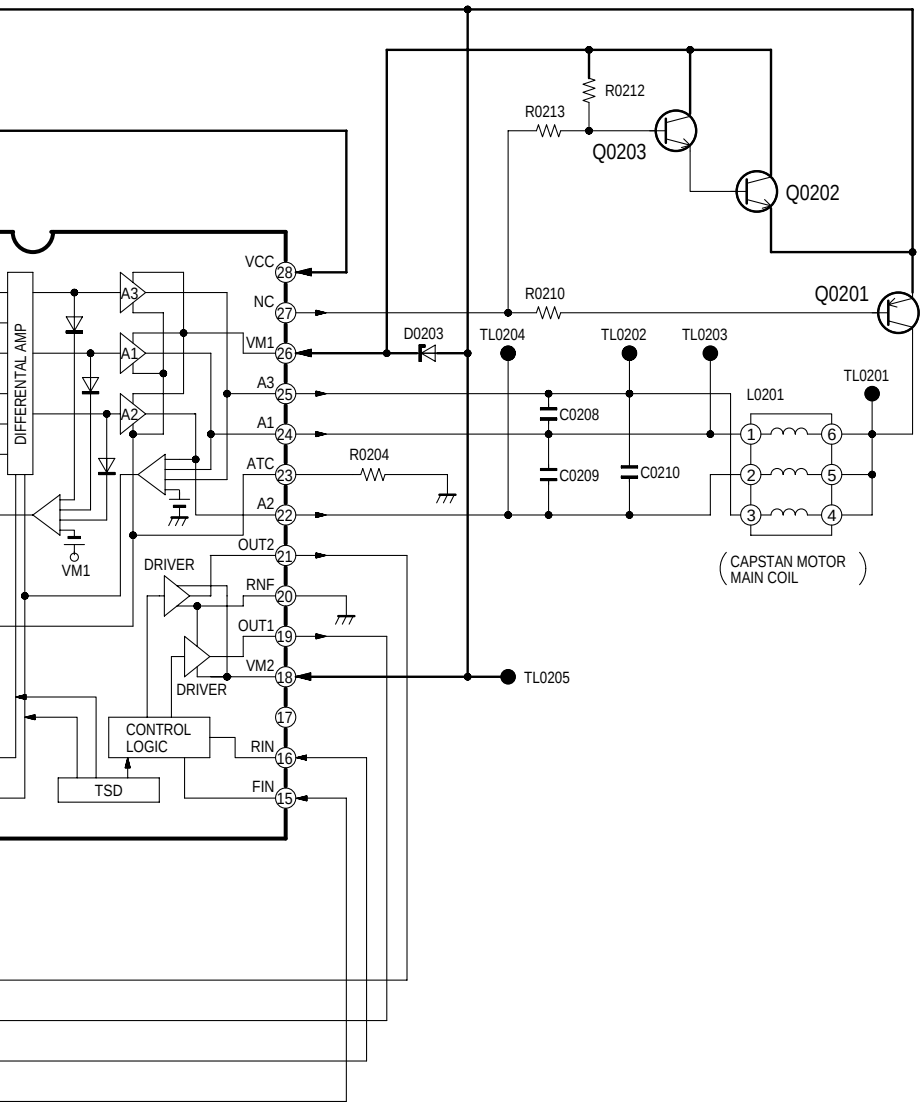
5	6	7	8

8.15. CYLINDER STATOR UNIT SCHEMATIC DIAGRAM



8.16. CAPSTAN UNIT SCHEMATIC DIAGRAM





NV-HS870EG/B/EC
CAPSTAN UNIT SCHEMATIC DIAGRAM

5 6 7

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

IC4501

JK4801 (AV3) FRONT
AUDIO IN (R)
AUDIO IN (L)
PS4801 PP3906 3
PS4801 PP3906 10
2
4

JK3906 (AV1) TV
1 AUDIO OUT (R)
2 AUDIO IN (R)
3 AUDIO OUT (L)
6 AUDIO IN (L)
TP4504
TP4503
TP4506
PS3902 PP3902 10
PS3902 PP3902 9
PS3902 PP3902 3
PS3902 PP3902 4
QR4504 MUTE
QR4504 MUTE
53
57
9
10

JK3902
AUDIO OUT (R)
AUDIO OUT (L)
TP4505
PS3902 PP3902 6
PS3902 PP3902 7
14
15

JK3905 (AV2) DECODER/EXT
1 AUDIO OUT (R)
2 AUDIO IN (R)
3 AUDIO OUT (L)
6 AUDIO IN (L)
PS3902 PP3902 12
PS3902 PP3902 13
QR4503 MUTE
QR4503 MUTE
51
52
SWITCH RCH
SWITCH LCH

TO TUNER
RFC AUDIO OUT
QR4507 MUTE
59

FROM DECODER
TUNER AUDIO (R)
TUNER AUDIO (L)
QR7652 MUTE
QR7652 MUTE
8
13

FROM DECODER/ TV DEMODU
TUNER AUDIO (N)
Q7601 MUTE
61

TO/FROM AC HEAD
A.HEAD (W)
A.HEAD (R)
99
97
REC EQ
MUTE
VCA
R
P

IC3001
MUTE
MUTE CTL
53
78
62
61

OUTPUT SELECT SWITCH RCH
OUTPUT SELECT SWITCH LCH
NORMAL SELECT SWITCH

INPUT SELECT SWITCH RCH
INPUT SELECT SWITCH LCH
PNR RCH
PNR LCH

AGC & SWITCH
AGC
FM MODULATOR/ DEMODULATOR
LPF
BPF
BPF
LPF
FM MODULATOR/ DEMODULATOR
AGC & SWITCH

IIC BUS INTERFACE
42
43
MAIN IIC CLOCK
MAIN IIC DATA
TO/FROM SYSTEM CONTROL

VCO F0
45
FSC
FROM LUMINANCE & CHROMINANCE

27
AUDIO H.SW
FROM SYSTEM CONTROL

QR4508
PB 60Hz Ⓗ
FROM SYSTEM CONTROL

30
D.FM REC Ⓛ
FROM SYSTEM CONTROL

PREAMP & SWITCH
29
24
21
22
P5001 8
P5001 9
P5001 10
L
R
Hi-Fi AUDIO HEAD

MUTE CTL
36
MUTE Ⓛ
FROM SYSTEM CONTROL

NV-HS870EG/B/EC
AUDIO BLOCK DIAGRAM

IC0201 (CAPSTAN MOTOR DRIVE)

CAPSTAN MOTOR L0201

TL0201

MOTOR DRIVE

DIFFERENTIAL AMPRIFIER

TORQUE CONTROL

TL AMP

EC AMP

POSITION SIGNAL PROCESS

TORQUE DIRECTION

H1

H2

H3

LOADING MOTOR

CONTROL LOGIC

INPUT		OUTPUT		MODE
PIN 15	PIN 16	PIN 19	PIN 21	
H	L	H	L	FORWARD
L	H	L	H	REWIND
H	H	L	L	BRAKE
L	L	OPEN	OPEN	STOP

R0206 CAPSTAN FG HEAD

CAP FG5V

TW2015

TW2002

TL2503

TL2502

UNREG 14.5V

IC6001 (SYSTEM CONTROL/SERVO IC)

P0201 P2501 1 — CURRENT LIMIT

P0201 P2501 2 — CAPSTAN ERROR TORQUE

P0201 P2501 3 — CAPSTAN REVERSE/ FORWARD

P0201 P2501 12 — LOADING (H)

P0201 P2501 11 — UNLOADING (H)

P0201 P2501 4 — CAPSTAN FG IN

CAPSTAN FG OUT

CTL OUT

EX.FF/REW (L)

S1501 MODE SW

POSITION SW2

POSITION SW3

POSITION SW1

20MHz IN

20MHz OUT

32KHz IN

32KHz OUT

X6002

X6001

FIP (L)

BACK UP 5V

P.FAIL (L)

IR

RESET (L)

S.DATA IN

S.DATA OUT

S.CLOCK

FIP CS

POWER KEY

IC7504 RESET

IC7502 IR RECEIVER

IC7503 RESET

N.SW 5V

QR1003

C7507

QR6005

Q6010

P6001 2 — TO/FROM OSD/SECAM

P6001 5

P6001 7

P6001 3

P6001 1

IC7501

DP7501 TIMER DISPLAY

F+ F+ F- F-

Q1001 BUFFER

FROM POWER

HEATER(+)

HEATER(-)

UNREG -29V

QR1002

SEG1

SEG18

GRID1

GRID7

VEE

SERIAL DATA

SERIAL CLOCK

CS

CYLINDER STATOR UNIT

P2901

MAIN COIL 2	6,7	VM	P2501-3,4
MAIN COIL 1	1	M2	P2501-9
MAIN COIL 3	9	M1	P2501-1
	3	M3	P2501-7
	5	GND	P2501-5
	8	HE-	P2501-2
	4	HE+	P2501-6
	2	VH+	P2501-8

HALL IC

REG 5V

IC2501 (CYLINDER MOTOR DRIVE)

COM

MOTOR DRIVE

PG/FG

DIFFERENTIAL AMPLIFIER

SCHMIT

TORQUE CONTROL

UNREG 14.5V

CYL PFG

CYLINDER ERROR TORQUE

N.SW 5V

TAKE-UP PHOTO

SUPPLY PHOTO

SAFETY TAB (L)

Q1501 TAKE UP PHOTO SENSOR

D1501 SENSOR LED

Q1502 SUPPLY PHOTO SENSOR

S7507 SAFETY TAB SW

IC1501 (T-REEL SENSOR)

IC1502 (S-REEL SENSOR)

REG 5V

TL6013

TL6012

S-REEL PULSE

T-REEL PULSE

CTL HEAD

P4002 5 — CTL HEAD (-)

P4002 6 — CTL HEAD (+)

EJECT S4802 — PS4801 PP3906 5

POWER S4803 — PS4801 PP3906 6

3D DNR S4801 — PS4801 PP3906 1

S-VHS S7516

INSERT S7510

A.DUB S7509

EXT LINK S7508

T.REC S7513

PAUSE S7515

REC S7501

CH DOWN S7502

PLAY S7512

STOP S7503

CH UP S7504

A2

A5

A4

NV-HS870EG/B/EC

SYSTEM CONTROL & SERVO BLOCK DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

		EE	VV	FULL SCREEN
CONTROL	EE(H) ④	H	L	H/L
	F.SCREEN ⑧	L	L	H
OUTPUT	Y OUT ⑲	⑤	⑦	③
	C OUT ⑭	⑨	⑫	⑪
	Y+C OUT ⑯	⑤ + ⑨	⑦ + ⑪	③ + ⑪

IC3901
(Y/C MIX)

EE (H) 4
VV Y IN 1
Y OUT 19
OSD Y IN 3
Y+C OUT 16
EE Y IN 5
VV Y IN 7
EE C IN 9
C OUT 14
OSD C IN 11
VV C IN 12
FULL SCREEN (H) 8

QR3007
V.EE (L)

PS3904 | PP3904 15
PS3904 | PP3904 12
VV Y OUT
PS3905 | PP3905 1
Y/C Y OUT
PS3904 | PP3904 14
Y/C C OUT
PS3905 | PP3905 11
OSD V OUT
PS3904 | PP3904 10
VV C OUT

Q3902
BUFFER
L3908
C3947,3948
L.P.F.
L3909
C3946
B.P.F.

JK3904
S-VIDEO OUT
④ REAR C OUT
③ REAR Y OUT

TP3024
TP3021

JK3906
AV1(TV)
⑲ VIDEO/Y OUT
⑮ C OUT
⑳ VIDEO IN

S3901
NORMAL ↔ S-VHS

JK3902
VIDEO OUT
REAR VIDEO OUT

IC3902
(INPUT/OUTPUT SELECT)

TP3002
V1 OUT 34
TP3003
V1 IN 36
OSD V IN 20
TUNER V IN 7
V2 IN 28
V2 OUT 26
Y/C V OUT 18
V3 IN 11
FULL SCREEN (H) 16

PS3905 | PP3905 3
VIDEO/Y IN

TP3022
PS3904 | PP3904 3

JK3905
AV2
(DECODER)
⑲ VIDEO OUT
⑮ C IN
⑳ VIDEO/Y IN

TUNER/
TV DEMODULATOR
⑥ RFC VIDEO OUT
㉔ TUNER VIDEO

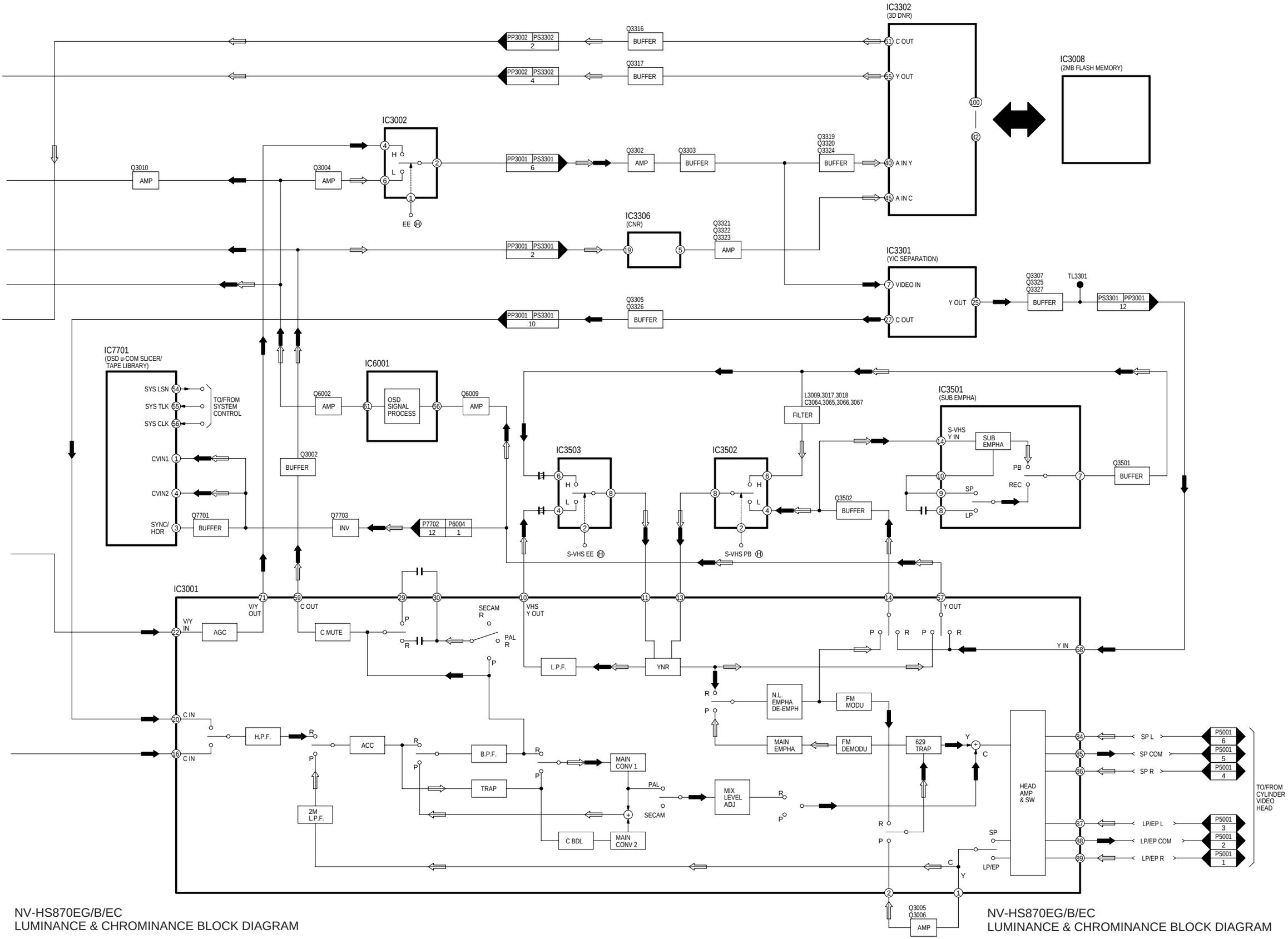
PP3902 | PS3902 1
PP3904 | PS3904 5

IC3903
TP3023
PP3904 | PS3904 1
H
L
PS3905 | PP3905 5
AV2/3 C IN
AV2 S IN (H)

JK4801
AV3
VIDEO IN
FRONT VIDEO IN
PS4801 | PP3906 8

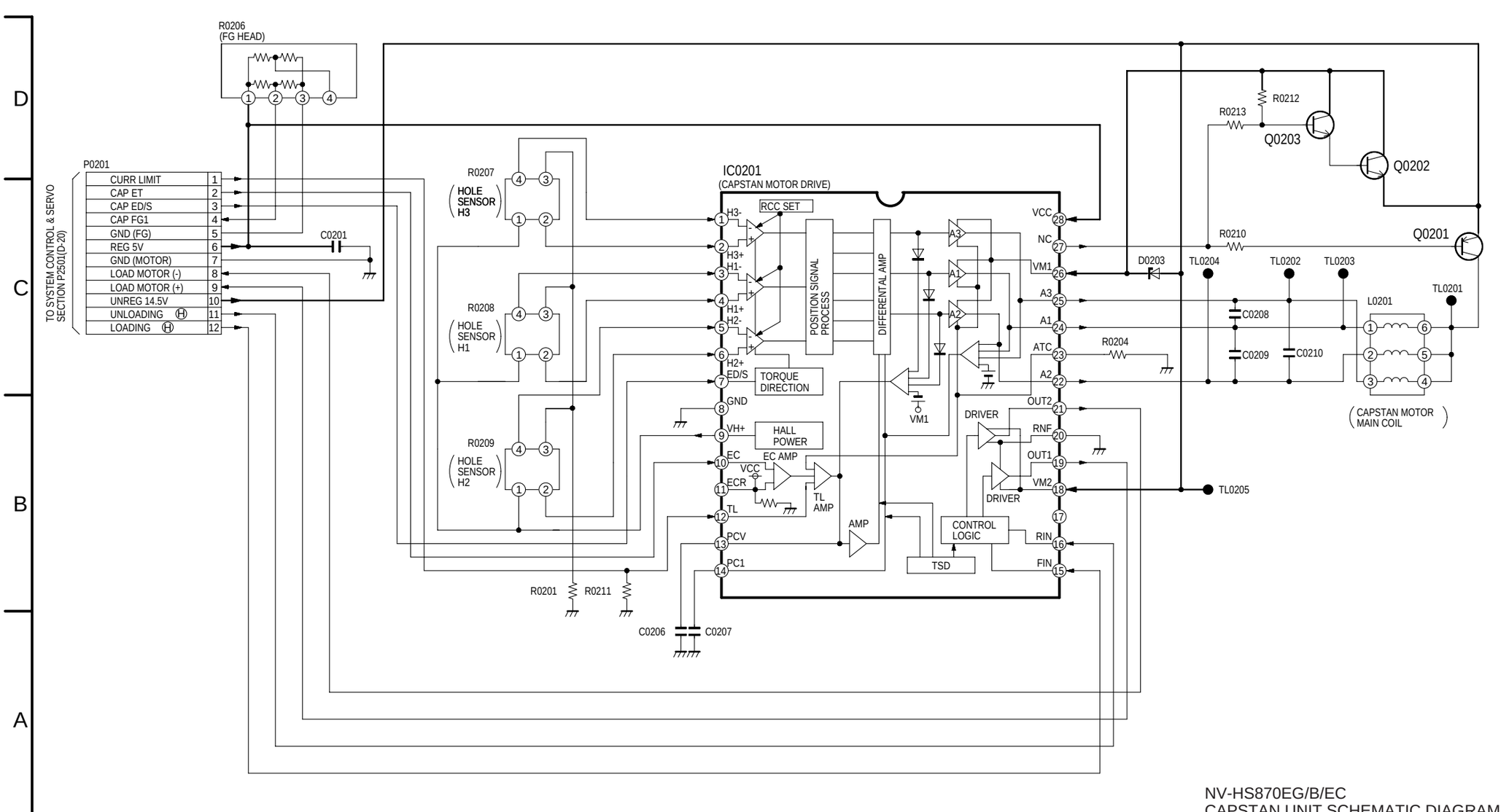
IC3991
JK4802
AV3
S-VIDEO IN
④ FRONT C IN
③ FRONT Y IN
PS4801 | PP3906 11
PS4801 | PP3906 13
AV3 S IN (L)

NV-HS870EG/B/EC
LUMINANCE & CHROMINANCE
BLOCK DIAGRAM

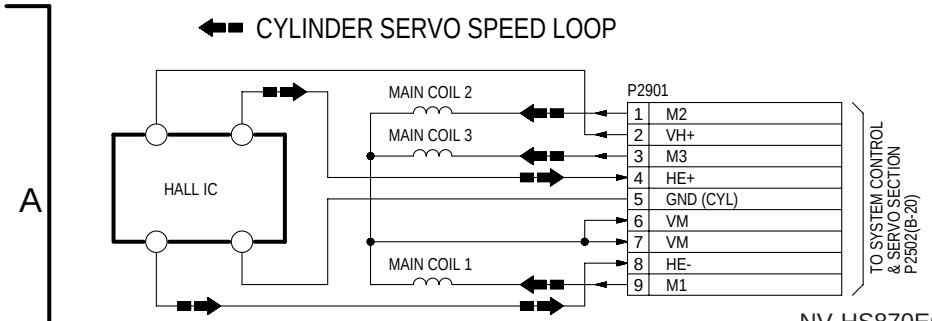


NV-HS870EG/B/EC
LUMINANCE & CHROMINANCE BLOCK DIAGRAM

NV-HS870EG/B/EC
LUMINANCE & CHROMINANCE BLOCK DIAGRAM



NV-HS870EG/B/EC
CAPSTAN UNIT SCHEMATIC DIAGRAM



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG/B/EC
CYLINDER STATOR UNIT
SCHEMATIC DIAGRAM

AUDIO SIGNAL PATH

TO POWER SUPPLY/RF SECTION PK7301 (C-10)

PK7301
SIF 1
GND 2
TUNER AUDIO (N) 3
4
5
6
TUNER 5V 7

TO POWER SUPPLY/RF SECTION PK7302 (B-10)

PK7302
OSD IIC CLOCK 1
OSD IIC DATA 2
3
TUNER AUDIO (R) 4
GND 5
TUNER AUDIO (L) 6

IC7301
TDA7873H/V2

AF SWITCH
STEREO DECODER STEREO ADJUST
POWER SUPPLY
AF AMPLIFIER 1
AF AMPLIFIER 2
FM DEMODULATOR NARROW-BAND PLL SC1
FM DEMODULATOR NARROW-BAND PLL SC2
DIGITAL IDENTIFICATION PILOT NARROW-BAND PLL
IIC BUS TRANSCEVER

TL7301
TL7302
TL7303

R7315 0
R7314 3300
C7318 16V10
C7326 1500P
R7316 6800
C7316 0.1
C7317 6V100
R7309 220
C7319 16V47
C7320 4700P
C7321 50V0.47
C7322 50V0.47 (N)
R7307 6800
C7327 1500P
C7328 1500P
R7308 6800
C7313 16V10
C7312 16V10
R7318 0
R7320 3300
R7319 3300
R7317 0
C7310 0.01
C7309 0.01
C7308 50V0.47 (N)
C7323 0.1
R7311 7500
R7312 100
R7313 100
C7301 0.01
R7301 0
C7303 50V0.47 (N)
C7302 50V0.47 (N)
R7304 4700
VR7301 10KB
R7306 5600
C7307 680P
C7306 0.012
X7301 VSX1086
R7305 5600
C7305 0.012
C7304 680P

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

NV-HS870EG
DECODER PACK SCHEMATIC DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

A-LINE

PS3301
EE (H) 1
Y/C C OUT 2
CNR OFF (H) 3
CORR SIGNAL 4
GND (DNR) 5
SEP IN 6
V BLANK (L) 7
C SYNC 8
GND (DNR) 9
SEP C OUT 10
GND (DNR) 11
SEP Y OUT 12
GND (DNR) 13
FSC 14
GND (DNR) 15
DIGITAL 5V 16
MAIN IIC DATA 17
MAIN IIC CLOCK 18
TO LUMINANCE & CHROMINANCE/ AUDIO SECTION PP3301(E-23)
A1
A2
A3
A4
A5
A6
A7

IC3307
TCHC4538AFEL
(MULTIVIBRATOR)
VCC C2 CR2 CLR2 A2 B2 Q2 Q2
C1 CR1 CLR1 A1 B1 Q1 Q1 VSS

IC3301
C1AB00001312
C DAC DAC VSS1 Y VSS4 VDD4
PLL DET VCO 1/2 8fsc 4fsc 1/8 IIC BUS
(8fsc)
CORING V-ENHANCER
Y/C SEP. & SKEW CNR MIX ON MIX OFF LPF PED. CLIP DELAY
PEAKING LINE N.C
LINE MEMORY LINE MEMORY
KILLER
INTERPOLATION CNR Y/C SEP. & SKEW DYNAMIC COMB FILTER SKEW CORRECT
ADC CNR
CENTER BIAS Y/C SEP. & SKEW SYNC CLAMP SKEW DET
VDD1 VSS2 Y+C TEST VDD3 VSS3 VDD2

V BLK
VR3001
100KB
R3326
560
R3323
110K
C3324
0.015
TL3304
D3304
MA142K
TL3303
C3329
470P
R3324
22K
H BLK
VR3002
50KB
L3309
33u
C3320
16V10
C3323
0.1
C3404
0.1
LB3301
VLP0196
C3403
0.1

LB3307 VLP0145
LB3306 VLP0145
C3307
33P
C3301
0.01
C3302
0.01
C3303
680P
C3308
0.01
R3302
330
R3301
0
C3304
0.1
C3305
16V10
C3306
0.1
R3303
100
R3304
100
L3301
22u
C3312
0.01
C3314
0.01
C3315
0.1
C3316
0.1
C3317
0.47
R3305
0
R3306
0
C3319
0.1
C3321
0.1
R3307
10K
L3303
22u
LB3308
VLP0145
C3318
16V10

L3307
22u
L3308
10u
R3334
390
R3356 100
R3355 100
R3329
2700
R3343
1800
TL3301
Q3325
2SD1819A
(AMP)
R3327
1K
L3306
39u
L3319
27u
L3320
15u
Q3307
2SB1218A
(BUFFER)
R3330
1800
C3334
47P
C3336
56P
C3343
33P
C3344
10P
R3328
750
R3342
620
Q3327
2SD1819A
(INV.)
Q3326
2SD1819A
(AMP)
C3337
0.1
C3338
6V47
R3325
2700
C3332
3P
R3320
1K
L3305
47u
R3321
1800
Q3305
2SB1218A
(AMP)
R3331
1800
C3331
8P
C3333
12P
C3341
0.1
Q3328
2SB1218A
(PB:ON)
R3395
1K
R3394
4700
Q3310
2SD1819A
(AMP)
R3338
1200
R3336
22K
C3340
0.01
Q3312
2SD1819A
(SWITCHING)
Q3311
2SC3930
(AMP)
R3337
12K
R3335
1200
R3339
470
D3301
MA142K
C3342
0.1
R3341
1K
R3391
18K
R3390
1K
C3419
0.01
C3420
0.1
C3421
0.1
C3423
0.01
C3424
0.1
C3425
4700P
C3426
0.01
R3392
820
C3422
0.01

IC3306
TA1225N
LIM + K
FO ADJ
B.P.F
VOB
VGG
AGC
APC
S/H2
S/H1
AGC DET
BIAS
CLOCK LOGIC
PLL 4
APC DET
CCD 906.5BIT
C3430
0.01
C3433
0.01
C3427
0.1
C3415
16V10
C3428
4.7
C3429
1
C3431
0.1
C3432
16V10

TO LUMINANCE & CHROMINANCE/ AUDIO SECTION PP3302(F-23)
PS3302
GND (DNR) 1
VV C OUT 2
GND (DNR) 3
VV Y OUT 4
B1
B2

IC3305
NJM2903M
+V -V
R3322
390
R3318
22K
R3319
2700
R3317
100K
D3303
MA8027H
C3310
0.1
C3322
6V47
C3309
1000P

R3310
680
C3311
0.1
C3313
16V10
R3315
680
L3302
22u
R3340
3900
Q3302
2SC3930
(AMP)
Q3301
2SB1218A
(INV.)
R3313
1K
L3304
27u
R3312
620
C3327
8P
Q3303
2SB1218A
(AMP)
R3311
560
C3326
12P
C3328
12P
R3314
3300
L3318
22u
L3317
22u
C3427
0.1
C3415
16V10
C3428
4.7
C3429
1
C3431
0.1
C3432
16V10

B-LINE
(B3)
(B4)
(B5)
(B6)

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKEST( )ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.(SP MODE)

NV-HS870EG/B/EC DNR PACK SCHEMATIC DIAGRAM

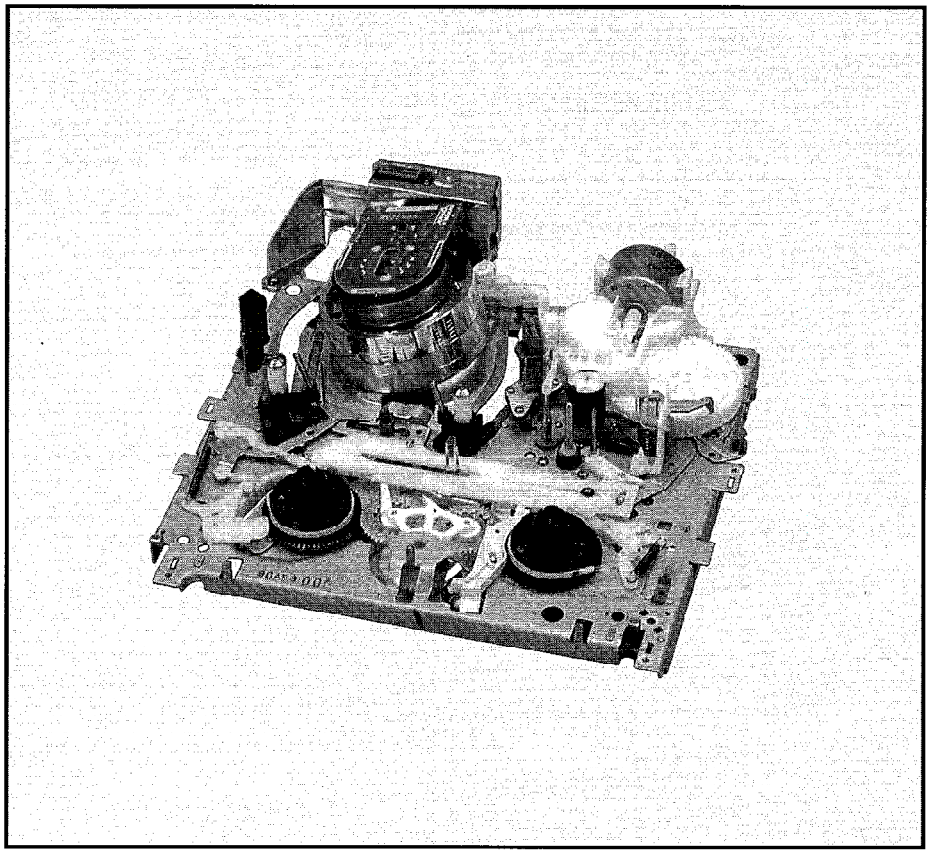
ORDER NO. VRD9612M129

Service Manual

Video Cassette Recorder

Panasonic VHS

Z-MECHANISM CHASSIS



INTRODUCTION

The Z-Mechanism chassis are built in several Panasonic VHS Video Cassette Recorders from NV-SD series in 1996.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

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1. OUTLINE OF Z MECHANISM

1-1. The tape transport path

(1) Mechanism Chassis

Aluminium Chassis has been changed to sheet metal (Thickness: 1.2 mm).

(2) Capstan position (Cassette-in method/Capstan-in method)

The Tape does not touch the Cassette tape so that the rationalization has been promoted such as Reel gear pinch up/down mechanism has been deleted.

(3) Deletion of P1 post

FE Head has been installed Limiter so that P1 post has been deleted.

(4) A/C Head base combined with P4 post

A/C Head has been combined with P4 post on the same base.

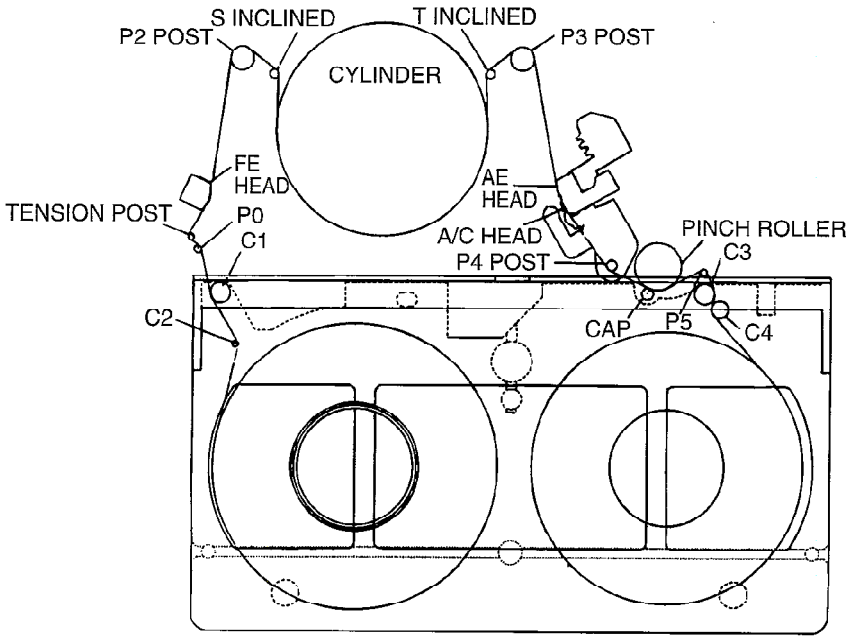
(5) Change of A/C head base type

The change of the angle winding the tape on A/C head has been reduced by the construction of A/C head base has been changed from the revolution type to slide base type.

(6) Improvement of P5 post

P5 post operation has been changed by non-adjustable of the Height and the Tilt adjustment so that the specification has been improved.

Z Mechanism tape transport path in REV mode



1-2. Cassette holder unit

(1) Cassette-in operation

The Rack drive arm drives Main Cam gear by inserting the cassette tape. Consequently, Position switch detects the cassette-in mode so that Loading motor drives. The mode goes to the Stop mode from the Cassette-in through the Loading mode.

① The parts quantity reduction of Cassette holder unit.
(Z Mechanism: 21 pieces, K Mechanism: 36 pieces)
a. Release lever has been installed in Right Side Plate.
b. Cassette guide has been installed in Front Panel unit.
c. Safety lever spring is made by the resin.
d. Opener lever has been changed into the single opener type.
e. One side of Side Plate unit is hung on Chassis in order to fix it.

② Improvement of the cassette insertion
(The force of the cassette insertion Z Mechanism: Approximately 400gm.,
K Mechanism: Approximately 600gm.)
The tooth pitch of Worm gear which has been extended against the previous model, is located on the Motor so that Worm gear can be reversed. Consequently, the Motor rotates before the insertion spring (the combined spring) is working when the cassette tape is inserted, so that the repelled force of the insertion spring has been reduced as differing from the present model.

③ Small-sized Cassette holder unit (Thinned unit)
a. The Wiper arm method which has been adopted, assigned Wiper arm between Cassette Holder Plate and Side Plate so that the small-sized of the width has been realized.
b. To prevent the increment of parts quantity such as Safety lever is used for Pre-open mechanism shown in the present model, and the small-sized unit has been realized by inclining one portion of the L groove in Side Plate.
c. The part of driving change-over is located in the nearest to the center of Reel so that the depth size is compacter.

1-3. Reel brake

(1) Supply Reel Brake is used for Tension Regulator which is composed of the conventional Main brake and the soft brake function.

(2) Take-up Reel Brake is used as Band Brake unit in order to correspond with Supply Reel Brake.

※ Tension Regulator performance:
This is composed of Tension regulator and brake. The tape always is given the tension against the advance direction by Tension band.

(3) Construction of Supply reel tension regulator
Comparison of the construction with the conventional model

	Z Mechanism	K Mechanism
Tension Arm Shaft Bearing construction	Resin	Tension arm
Tension Band	Felt less Lumiller	Felt Lumiller
Braking method	Tension regulator	Main & soft brake

Operating mode and necessary function

Mechanism mode	Necessary function	Operation
Cassette down	Prevention of the tape slag (Soft brake)	Soft brake
Completion of Loading	Prevention of the tape slag (Soft brake)	Tension regulator
REV	Prevention of in Play mode to REV mode (Soft brake)	Tension regulator
PLAY, FF	Back tension adjustment	Same as the conventional
STOP	Main brake function	Tension regulator

(4) Construction of Take-up brake

Take-up brake is used Band brake as well as Supply brake depend on corresponding with Band brake is adopted at the Supply Side.

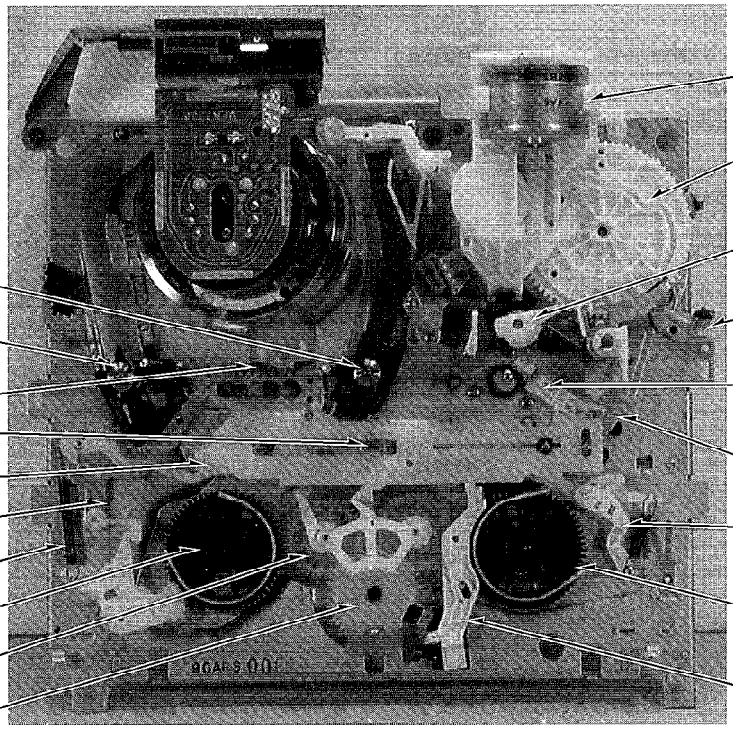
Mechanism mode	Function	Band
EJECT-MID	Soft brake	On
REV	Soft brake	On
PLAY	Release of brake	Off
STOP	Brake	On
FF/REW	Release of brake	Off

1-4. Number of Gear Phase Alignment Point and Replacement Parts

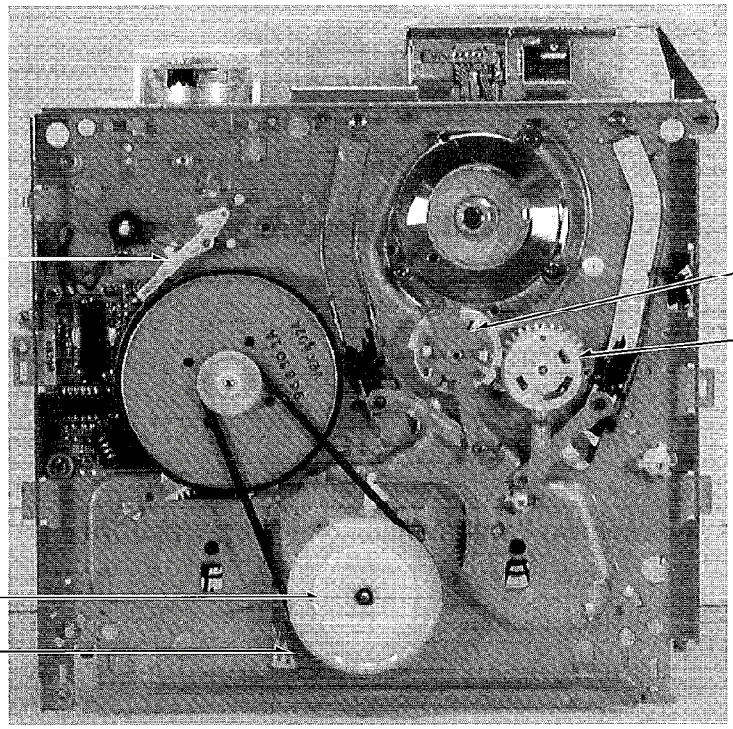
Number of Gear Phase Alignment Point	
G2 Mechanism	12 Alignment Points
G Mechanism	12 Alignment Points
K Mechanism	6 Alignment Points
Z Mechanism	4 Alignment Points
Number of Replacement Parts (including the Screw and Washer)	
G2 Mechanism	Approx.170 Pieces
G Mechanism	Approx. 150 Pieces
K Mechanism	Approx. 100 Pieces
Z Mechanism	Approx. 70 Pieces

Z Mechanism Components

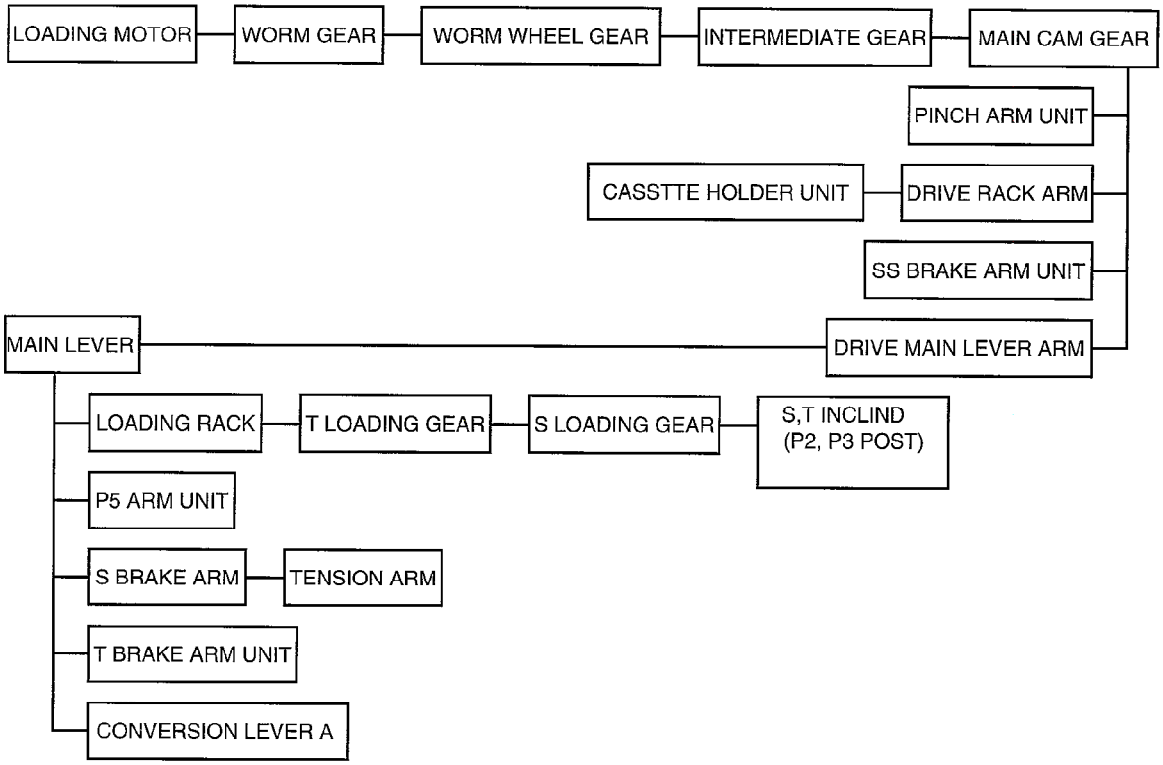
TOP VIEW

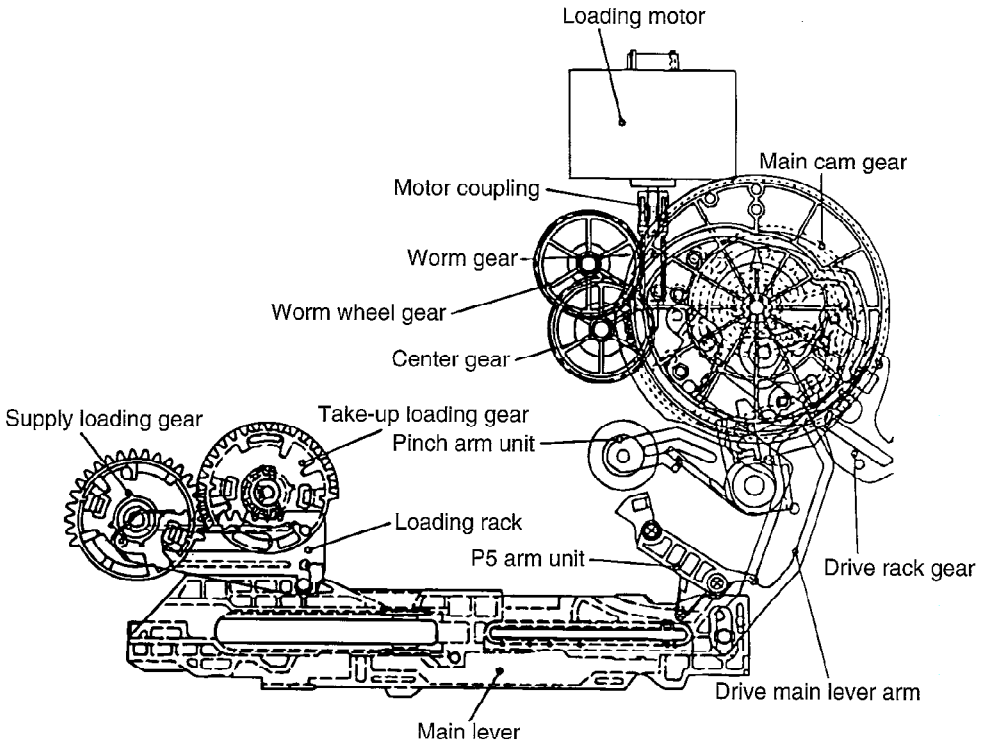


BOTTOM VIEW



FLOW CHART OF LOADING MECHANISM





2. REMOVAL OF CASSETTE TAPE

There are 2 ways to remove a cassette tape.

2-1. Removal of compulsory loading

(1) Press FF, REW and EJECT buttons simultaneously and set the Service Mode 7

(2) Press STOP button in order to unload the mechanism. (Pay an attention of tape slag)
Service Mode Indication :
7 ※※ ※※ (STOP)→7 00 ※※ (EJECT)

2-2 Removal of manual operation of Main cam gear

(1) Disconnect the AC power cord and remove Top Panel.

(2) Rotate Main cam gear to the clockwise and unload the mechanism (Tape is remaining) (Fig. A1).

TOP VIEW

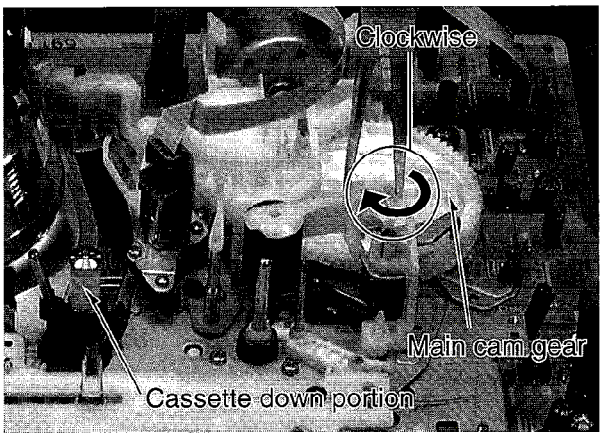


Fig. A1

(3) Rotate the Pole of Capstan motor to the clockwise from the bottom in order to remove the tape slag (Fig. A2).

BOTTOM VIEW

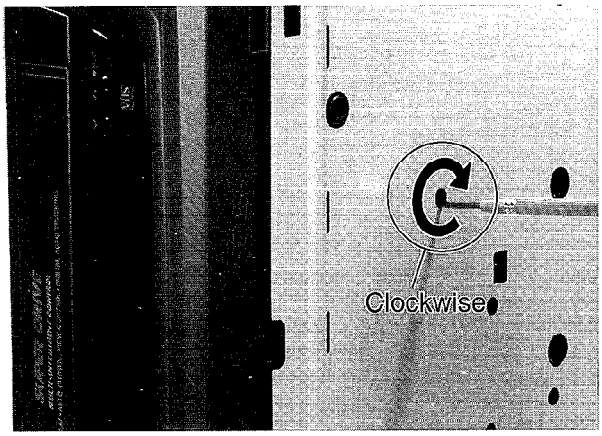


Fig. A2

(4) Rotate Main cam gear to the clockwise in order to eject the cassette tape.

3. REMOVAL OF CASSETTE HOLDER UNIT & MECHANISM CHASSIS

3-1. Removal of Cassette holder unit

(1) Remove Top panel and Front panel unit (Fig. B1)

TOP VIEW

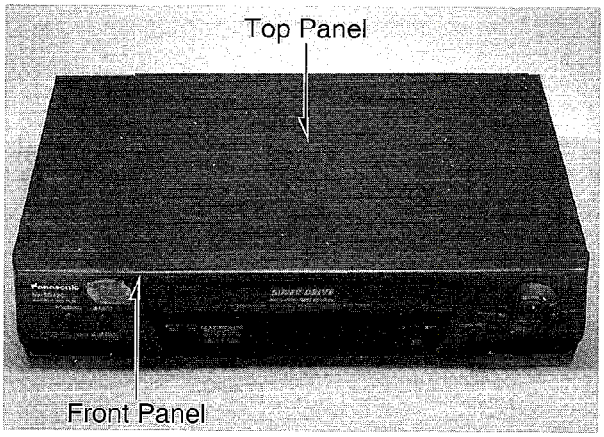


Fig. B1

(2) Remove Top plate

Remove 4 tabs fixing Top plate and remove Top plate (Fig. B2).

※ 4 Tabs should be removed softly duc to they are fragile.

TOP VIEW

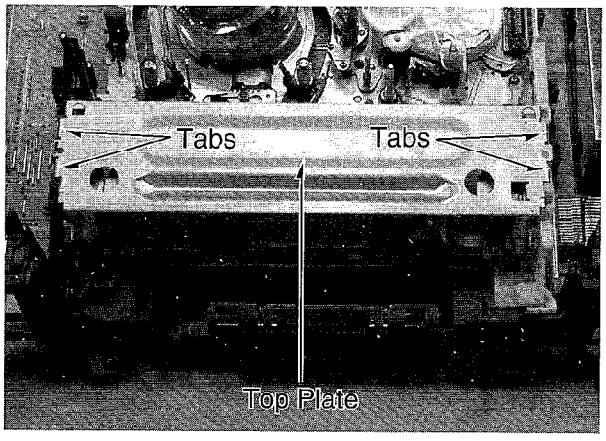


Fig. B2

(3) Remove Casscttc Holder Plate

Keep pressing 2 stoppers on Cassette holder Plate and Press Cassette holder plate to the rear and remove it from Left and Right Side Plate (Fig. B3).

TOP VIEW

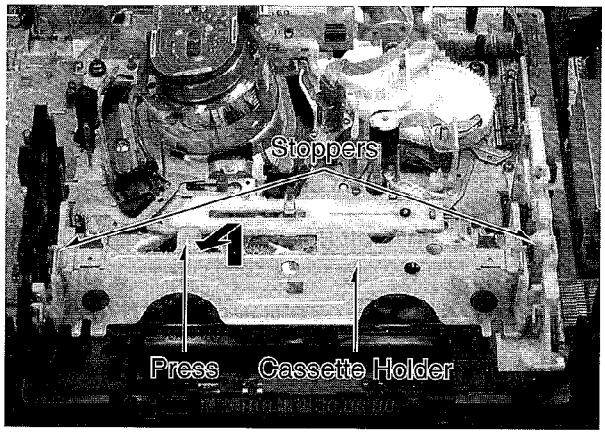


Fig. B3

(4) Remove Left and Right Side Plate

Remove Conjuction spring of Drive gear.

Remove 3 red screws, 3 tabs and remove Left and Right Side Plate (Fig. B4, B5).

TOP VIEW

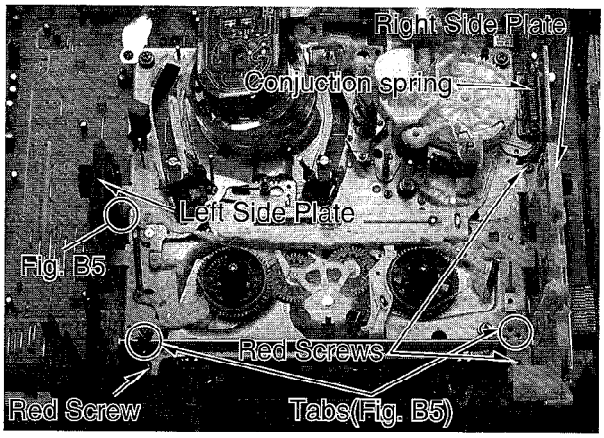


Fig. B4

TOP VIEW

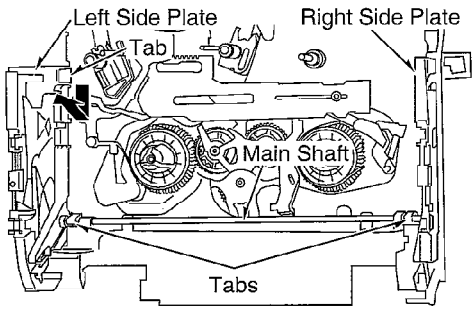


Fig. B5

(5) Remove Main shaft (Fig. B6)

TOP VIEW

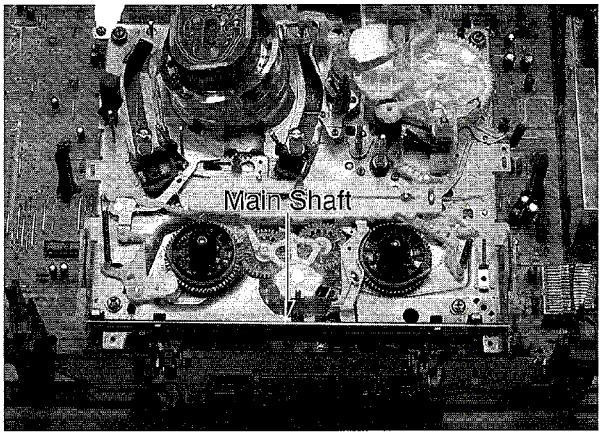


Fig. B6

3-2. Removal of Mechanism chassis

(1) Remove Mechanism chassis

Disconnect P3001, P2502 and P4001. Remove 5 screws (3 red screws and 2 gold screws) on Mechanism chassis and take out Mechanism chassis (Fig. B7).

TOP VIEW

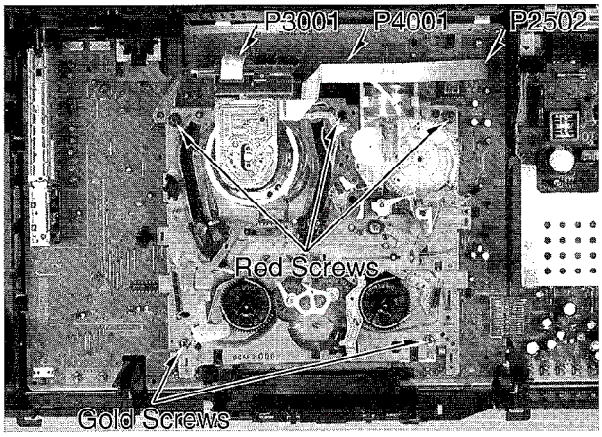


Fig. B7

4. DISASSEMBLY/ASSEMBLY METHOD FOR MECHANISM

4-1. Disassembly of mechanism

1. Removal of Pinch arm

   Unlock the tab (opener space). Remove Opener space and Pinch arm (Fig. C1).

2. Removal of Loading motor unit

   Unlock 3 tabs and remove Loading motor unit (Fig. C1 C2)

   2 tabs of them located on the bottom of the Mechanism (Fig. C2).

TOP VIEW

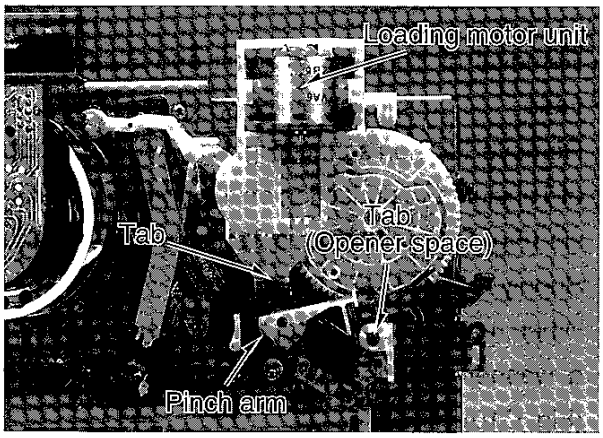


Fig. C1

BOTTOM VIEW

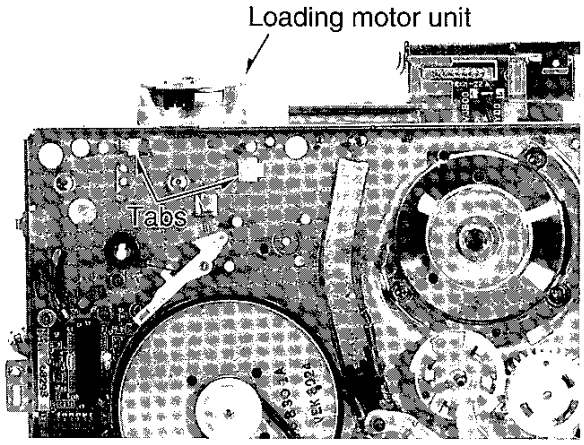


Fig. C2

3. Removal of Main cam gear

   Remove Snap washer located on the bottom of Chassis by using retaining ring remover (Fig. C3) and remove Main cam gear (Fig. C4).

BOTTOM VIEW

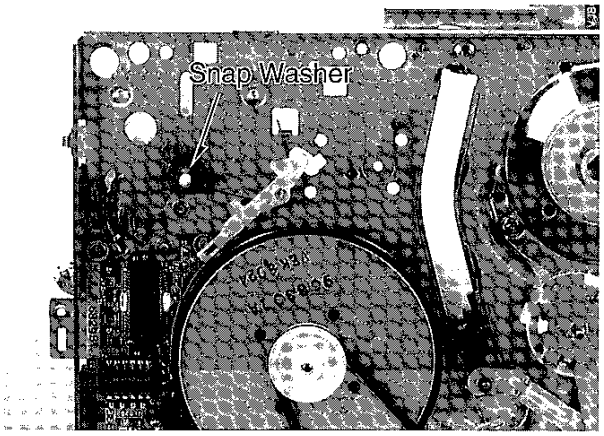


Fig. C3

TOP VIEW

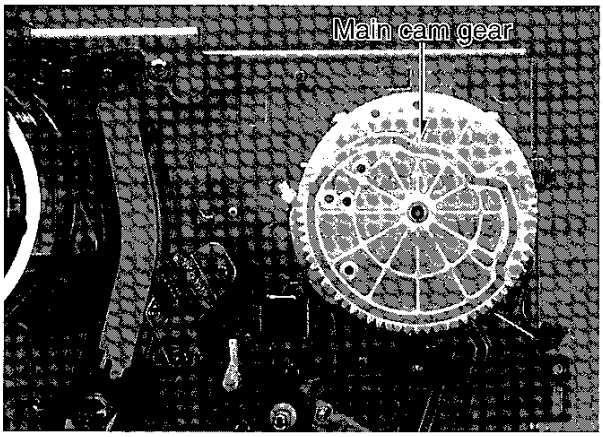


Fig. C4

4. Removal of Drive rack arm

Rotate Drive rack arm to the counterclockwise and remove it (Fig. C5)

TOP VIEW

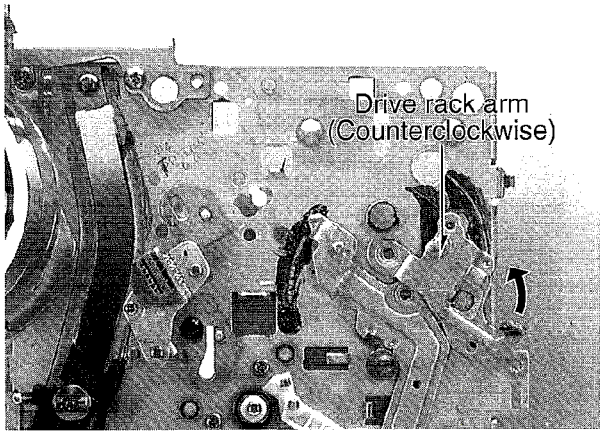


Fig. C5

5. Removal of Main lever, P5 arm and Conversion lever A

Removal cut washer located on the main lever. Unlock 2 tabs of Prism LED and 1 tab on the projection of Chassis while keep lifting the left side of Main lever, and remove Main lever, P5 arm and Conversion lever A (Fig. C6).

※ It is easier to unlock the tabs by using a tweezer.

TOP VIEW

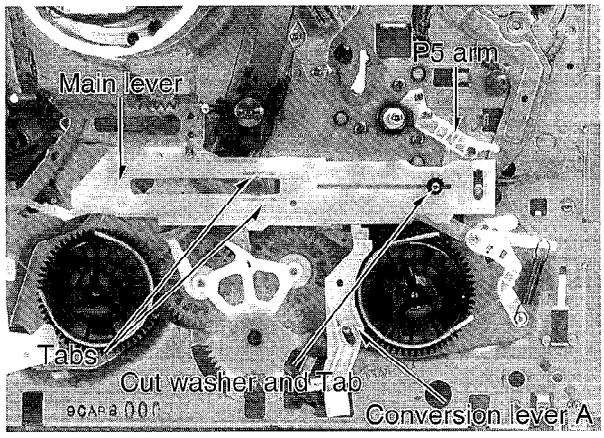


Fig. C6

6. Removal of Drive main lever arm

Rotate Drive main lever arm to the counterclockwise and remove it (Fig. C7).

TOP VIEW

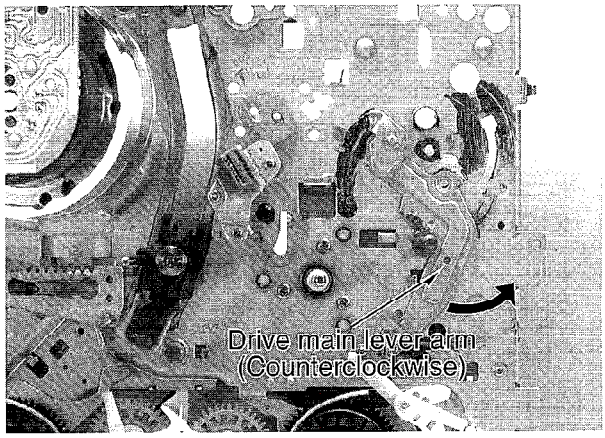


Fig. C7

7 Removal of Tension arm unit and Supply reel table

Remove Tension spring (Fig. C8). Unlock the tab of Tension arm projection on the bottom of Chassis (Fig. C9) and remove Tension arm unit and Supply reel table (Fig. C8).

※ When remove supply reel table, be sure whether a washer attaches on Supply reel table shaft (Fig. C10).

TOP VIEW

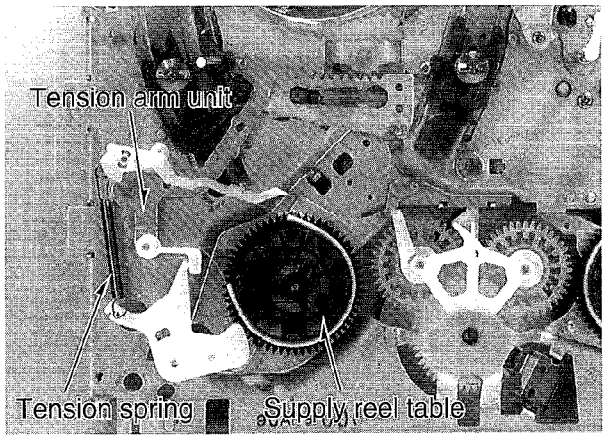


Fig. C8

BOTTOM VIEW

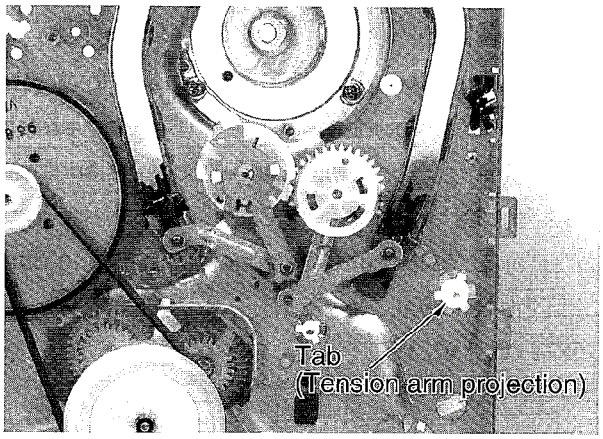


Fig. C9

TOP VIEW

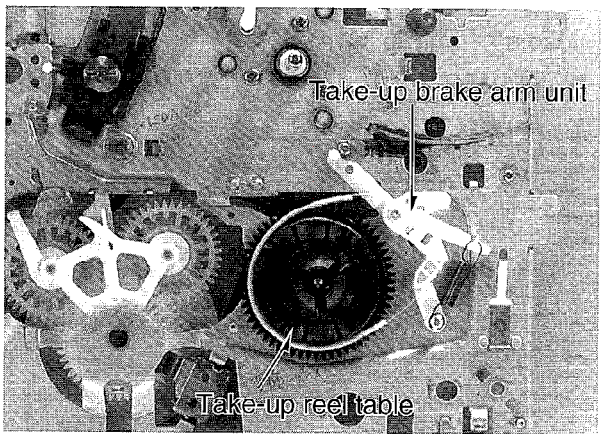


Fig. C11

SIDE VIEW

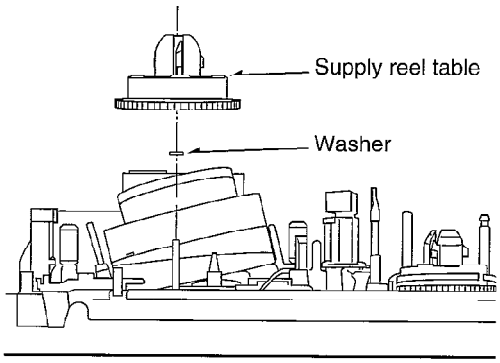


Fig. C10

8 Remove of Take-up brake arm unit and Take-up reel table

Unlock the tab of Take-up brake arm unit from the bottom of Chassis (Fig. C12). Remove Take-up brake arm unit and Take-up reel table (Fig. C11).

※ When remove Take-up reel table, be sure whether a washer attaches on Take-up reel table shaft (Fig. C13).

BOTTOM VIEW

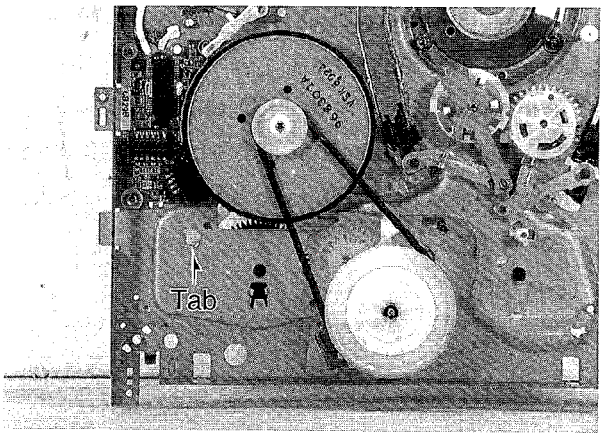


Fig. C12

SIDE VIEW

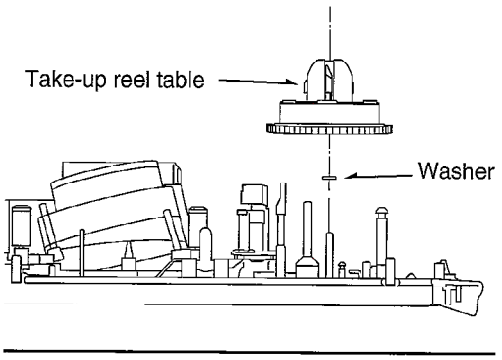


Fig. C13

9. Removal of Take-up & Supply loading arm
Unlock the tab and remove Take-up and Supply loading arm (Fig. C14).

BOTTOM VIEW

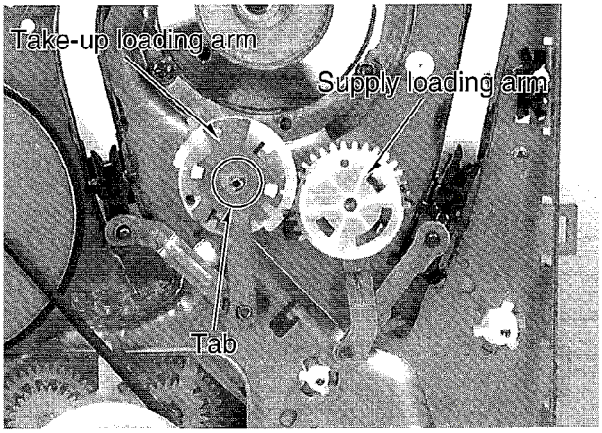


Fig. C14

10 Removal of Prism LED, Take-up & Supply shaft holder and Loading rack
Push the tab of Prism LED and remove Prism LED Remove Take-up and Supply shaft holder from the groove of Chassis and remove Loading rack (Fig. C15).

TOP VIEW

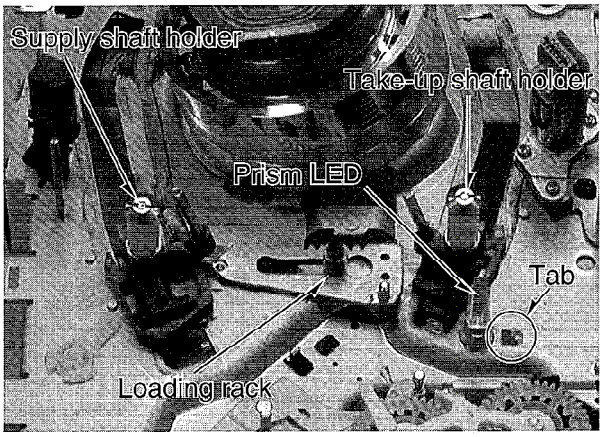


Fig. C15

11. Removal of Center clutch, Conversion gear spring, Conversion gear, Conversion lever B and Idler arm unit
Remove the Belt and the Cut washer (Fig. C16).
Remove Center clutch (Fig. C16) Conversion gear spring, Conversion gear, Conversion lever B and Idler arm unit (Fig. C17).

※ Pay an attention of Conversion gear spring during the removal.

BOTTOM VIEW

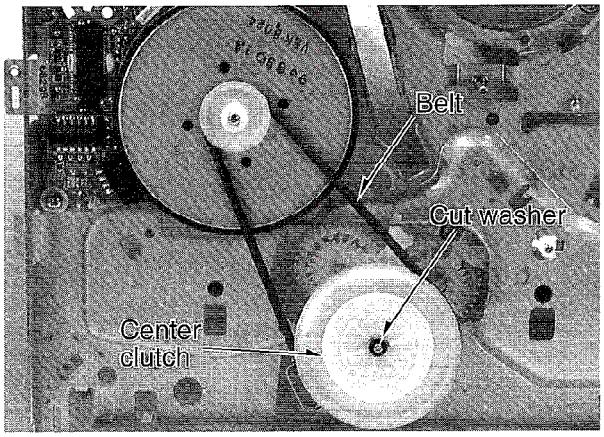


Fig. C16

BOTTOM VIEW

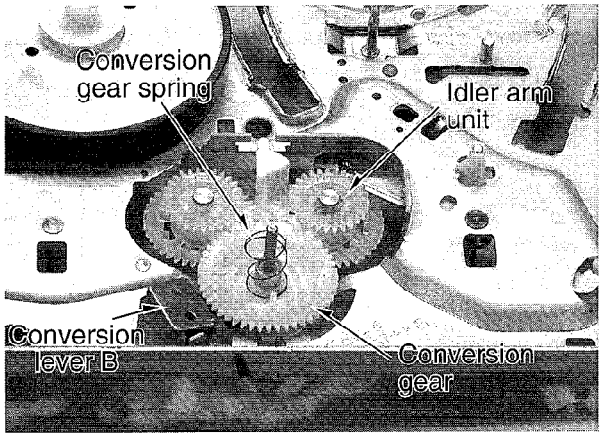


Fig. C17

12. Removal of Capstan unit

Remove 3 gold screws (Fig. C18).

Remove 2 gold screws on the bottom of Chassis (Fig. C19)

Keep moving SS brake arm and remove Capstan unit.

TOP VIEW

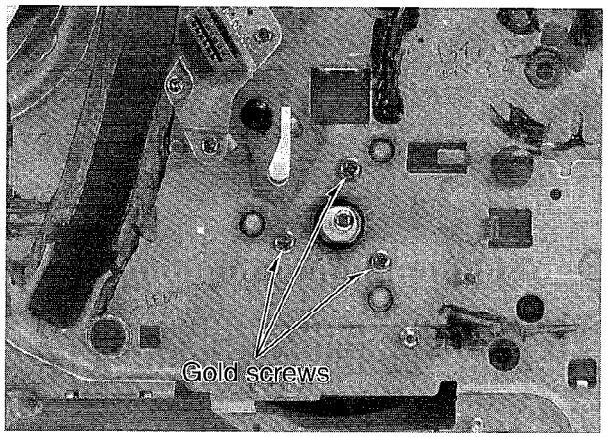


Fig. C18

BOTTOM VIEW

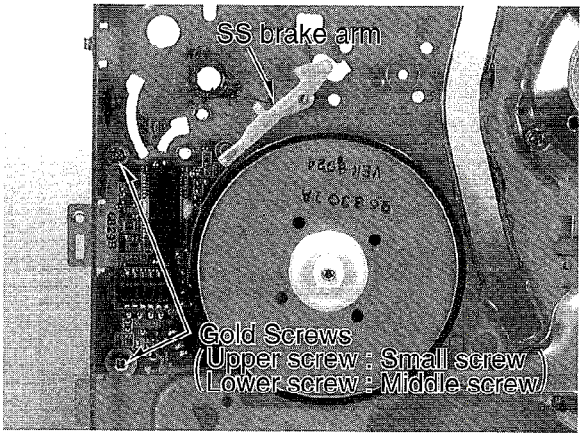


Fig. C19

13. Removal of Cylinder unit

Removal red screw (Fig. C20).

Remove 3 gold screws on the bottom of Chassis and remove Cylinder unit (Fig. C21).

TOP VIEW

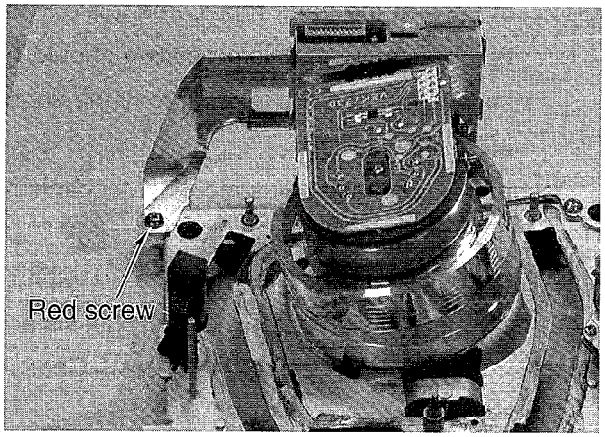


Fig. C20

BOTTOM VIEW

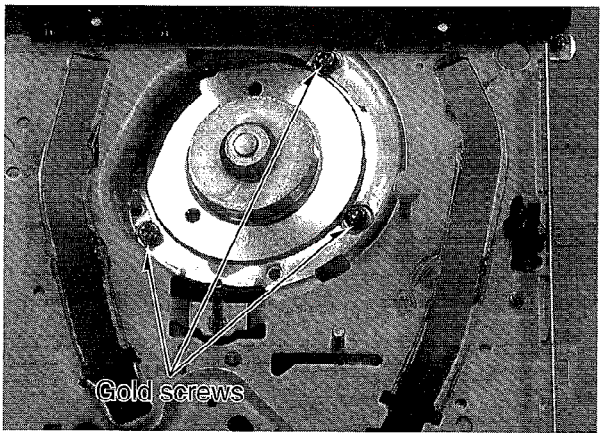


Fig. C21

4-2. Assembly and phase adjustment of mechanism

The gear phase alignment has been performed in the EJECT position and it is crucial for the Z Mechanism to operate correctly.

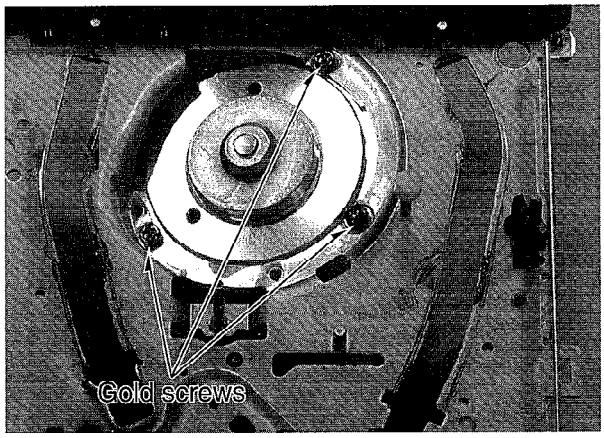
NOTE: In case of the parts replacement like Position switch, Mechanism position should be set to Eject position in order to fit the phase of Position switch

1 Assembly and phase adjustment of Mechanism

(1) Assembly of Cylinder unit

Cylinder unit should be fixed by 3 screws (GOLD) from the bottom side of Mechanism chassis and red screw on the top side of Mechanism Chassis (Fig. E1, E2).

BOTTOM VIEW



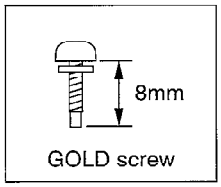
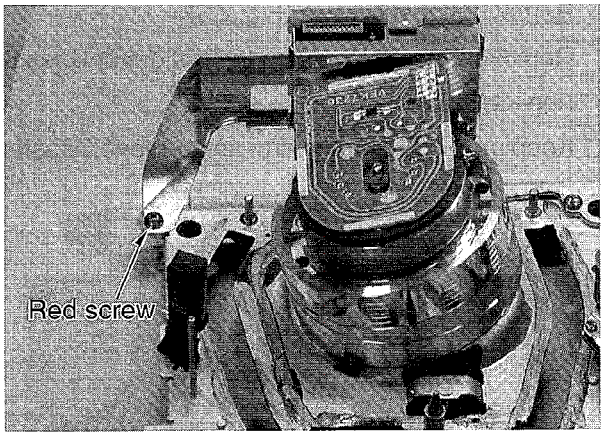


Fig. E1

TOP VIEW



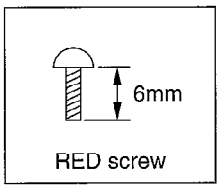
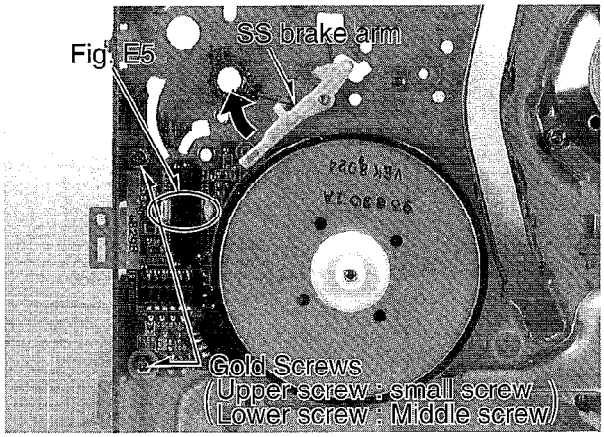


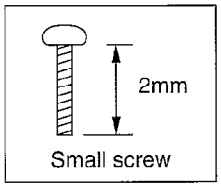
Fig. E2

(2) Assembly of Capstan unit

Move SS brake arm in the direction of arrow (see Fig. E3) and capstan unit should be fixed by 2 screws (GOLD) on the bottom side of Mechanism chassis and 3 screws (GOLD) on the top of Mechanism chassis (Fig. E3 E4)

BOTTOM VIEW





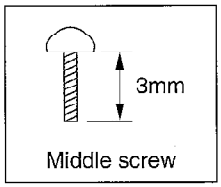
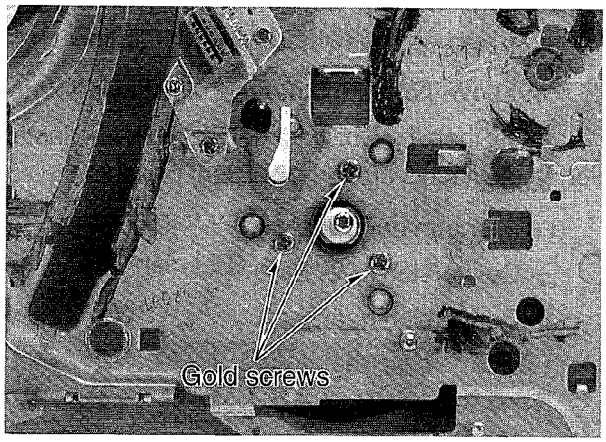


Fig. E3

TOP VIEW



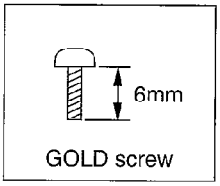


Fig. E4

NOTE: Replacement of Capstan unit and Procedure of applying the silicone grease.

REPLACEMENT OF CAPSTAN UNIT

In case of replacement of the Capstan Unit the Silicone grease have to be applied between the Mechanism chassis and the Drive IC by the following procedure.

Silicone grease No. VFK1301 for radiation of the Drive IC

Silicone grease is used for the radiation of the Drive IC. The heat occurred on the IC is radiated to the Mechanism chassis through the grease. In case of the incomplete radiation, the safety circuit operates depending on the rise of the temperature and it possibility stop the operation of the Drive IC

PROCEDURE OF APPLYING THE SILICONE GREASE

① There is a cut-out part at the Drive IC mounting position and the bottom of the IC can be seen from the cut-out part Apply the Silicon grease to whole the cut-out part of IC as shown in Fig. E5-1 so that the grease is piled 0 3–0 5 mm from the surface of the C B A

② Next, from the component side of the C.B A., apply the Silicon grease so that the grease is piled at the metal of the center of the IC as shown in Fig. E5-2.

Fig. E5-1. Apply the Silicon grease so that the grease is piled 0.3 0.5 mm from the surface of the C.B.A.

Fig. E5-2. Apply the Silicon grease at the metal of the center of the IC.

SIDE VIEW

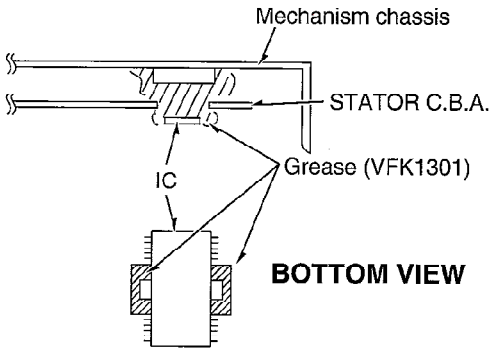


Fig. E5

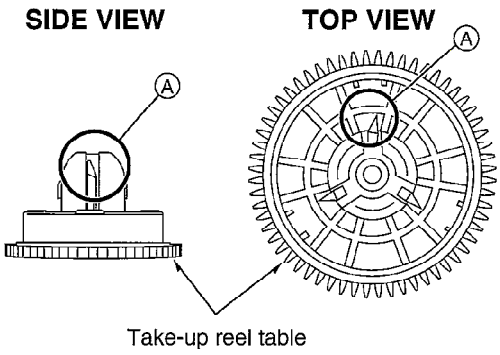


Fig. E11

(7) Assembly of Supply reel table and Tension arm unit

Install washer (Fig. E13) and Supply reel table. Insert Tension arm unit to Tension arm projection and hang Tension spring with Supply spring arm projection (Fig. E12).

※1 Pay an attention of Position of the Supply spring arm.

NOTE: The shape between portion A for Take-up reel table and portion B for Supply reel table is different.

Therefore, confirm the shape of portion A and B before mounting reel tables. If Take-up reel table has been confused with Supply reel table and they have been installed, the trouble of reel table rotation slip happens (Fig. E14).

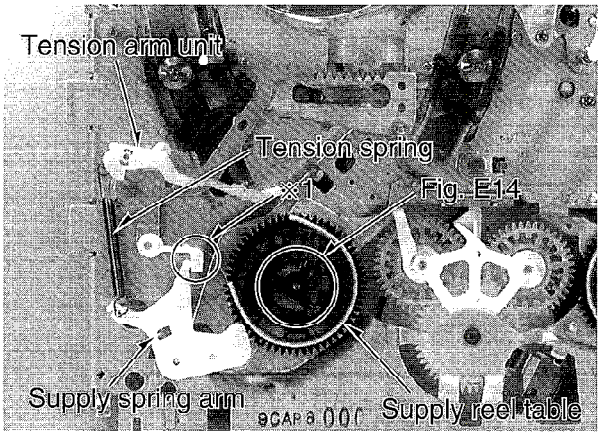


Fig. E12

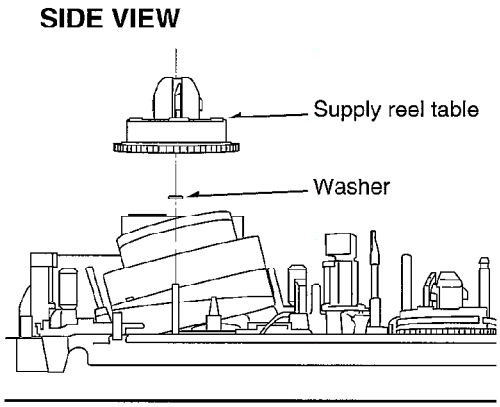


Fig. E13

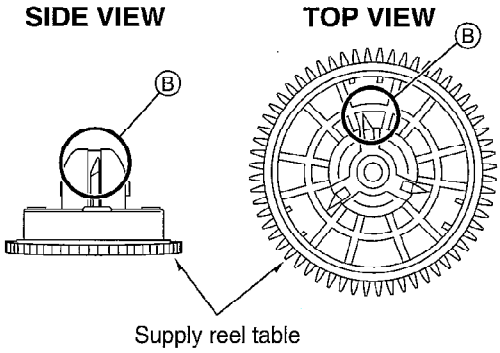


Fig. E14

(8) Assembly of Drive main lever arm

Install Drive main lever arm so that Drive main lever arm fits to the groove of Chassis.

And rotate Drive main lever arm to the clockwise in order to adjust the phase between the hole of the position fixture and the penetration hole of Chassis (Fig. E15).

TOP VIEW

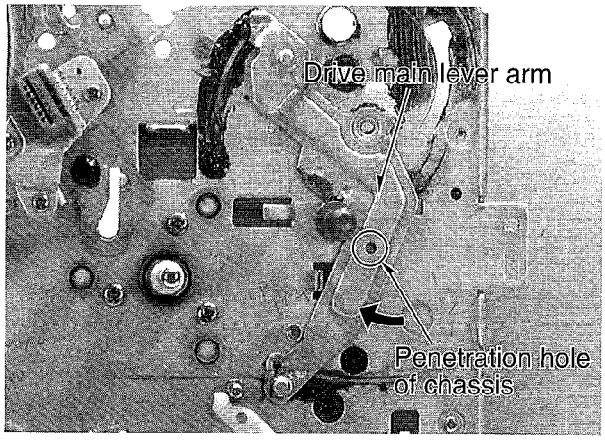


Fig. E15

(9) Assembly of Conversion lever A, P5 arm and Main lever

Install Conversion lever A and P5 arm (Fig. E16, E17).

Adjust the phase of Main lever so that Main lever fits the projection of Loading rack.

Main lever has to be locked at the projection of Chassis by 2 tabs of Prism LED (Fig. E16).

※ Conversion lever A, P5 arm, Supply brake arm unit and the projection of Take-up brake arm have to be installed to the groove under the Main lever (Fig. E18).

TOP VIEW

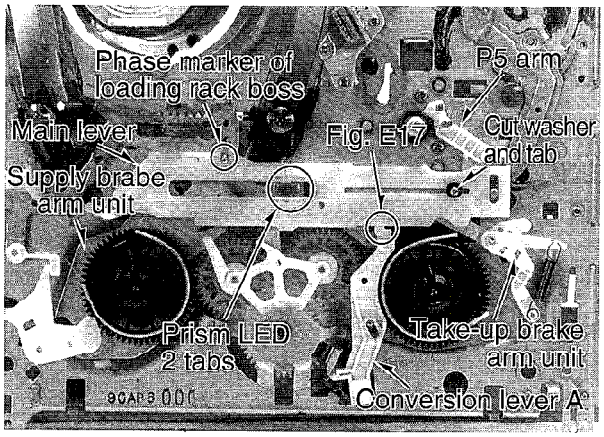


Fig. E16

TOP VIEW

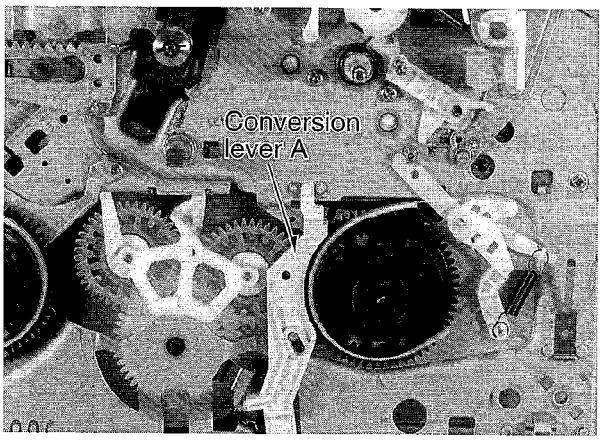


Fig. E17

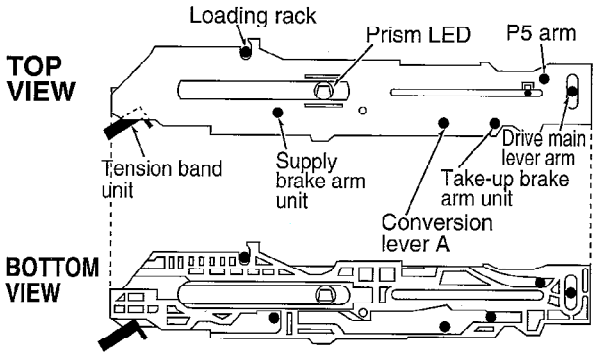


Fig. E18

(10) Assembly of Drive rack arm

Install Drive rack arm so that Drive rack arm fits the groove of Chassis and rotate it to the clockwise in order to fit the penetration hole of Chassis (Fig. E19)

TOP VIEW

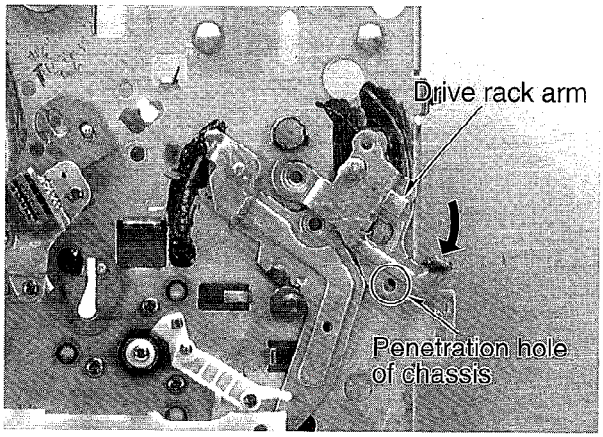


Fig. E19

(11) Assembly of Main cam gear

Install Main cam gear so that Main cam gear fits the penetration hole of Chassis (Fig. E20) and fix it by the snap washer from the bottom of Chassis (Fig. E21).

TOP VIEW

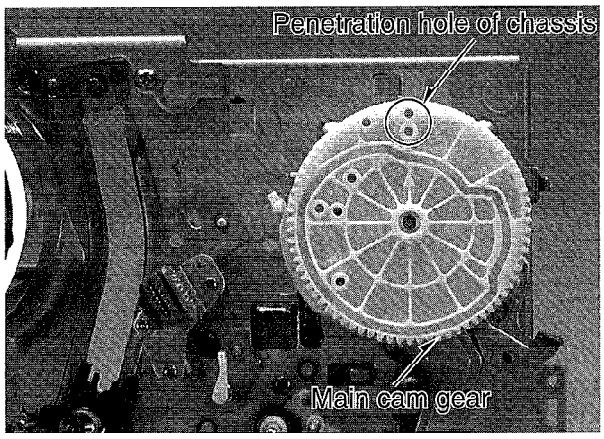
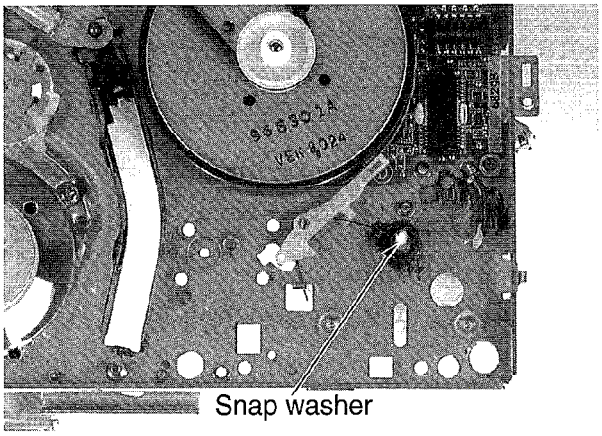


Fig. E20

BOTTOM VIEW



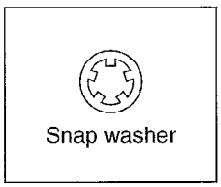


Fig. E21

(12) Assembly of Loading motor unit

Install Loading motor unit so that Loading motor unit fits the groove of Chassis (Fig. E22).

(13) Assembly of Pinch arm

Put Pinch arm together and install Opener space to fix Pinch arm (Fig. E22).

TOP VIEW

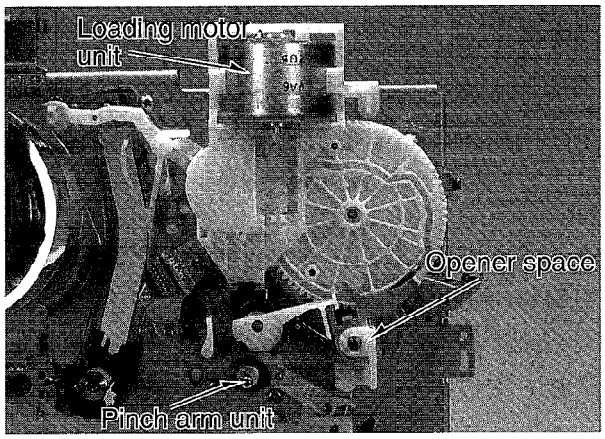


Fig. E22

4-3 Assembly of mechanism chassis

1 Assembly of Mechanism chassis

(1) Adjust the phase of Position switch in Main C B A..

Rotate Position switch until the click point. The projection of Position switch should be set to just above (Fig. F1)

TOP VIEW

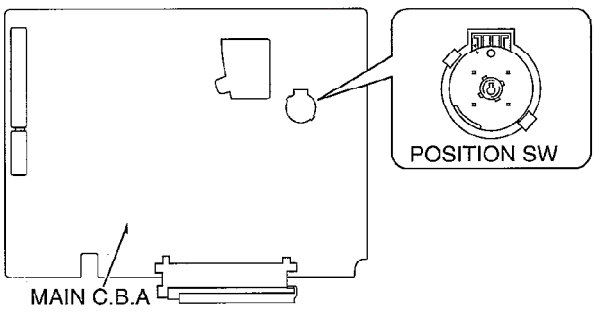


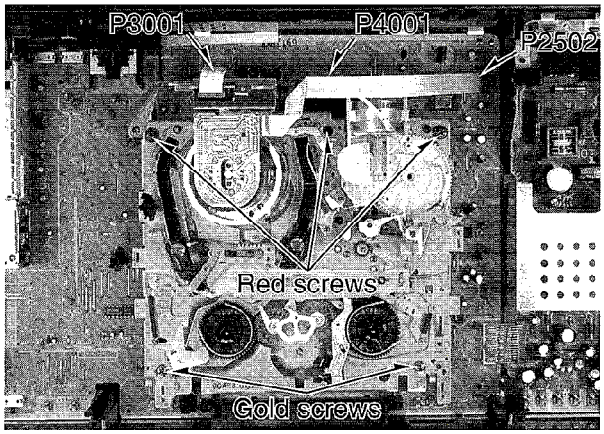
Fig. F1

(2) Assembly of Mechanism chassis

Put Mechanism chassis on Main C.B.A. and fix it by 5 screws (3 red screws and 2 gold screws).

Connect P3001, P2502 and P4001 (Fig. F2)

TOP VIEW



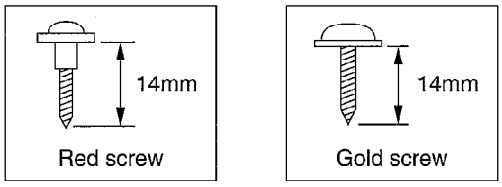


Fig. F2

※ The red screws has a gap among the chassis. Therefore be careful not to tighten too much.

2. Assembly of Cassette holder unit

(1) Assembly of Main shaft

Install Main shaft so that Main shaft fits the groove of Chassis (Fig. F3)

TOP VIEW

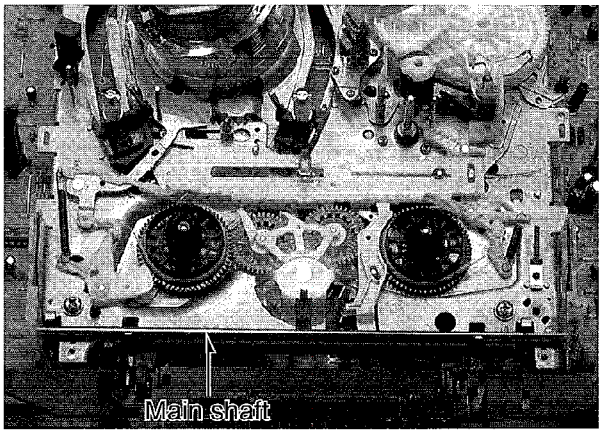


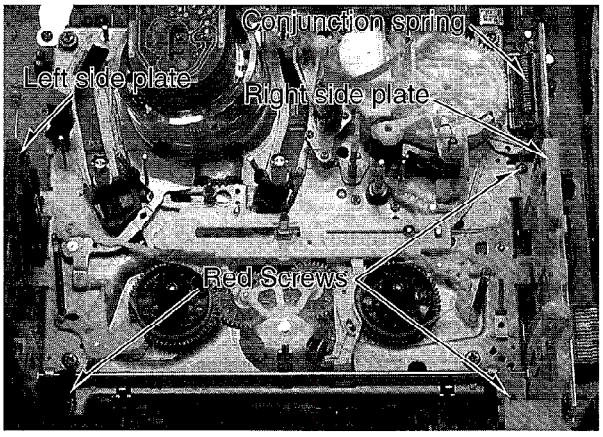
Fig. F3

(2) Assembly of Left & Right side plate

Install Left side plate so that Left side plate fits the groove of Chassis and fix it by the red screws.

After adjustment the phase of waper arm and Drive rack (Fig. F5), install Right side plate so that Right side plate fits the groove of Chassis and fix it by 2 red screws. Hang Conjunction spring on the projection of Drive rack arm (Fig. F4, F5).

TOP VIEW



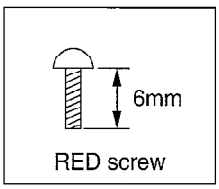


Fig. F4

SIDE VIEW

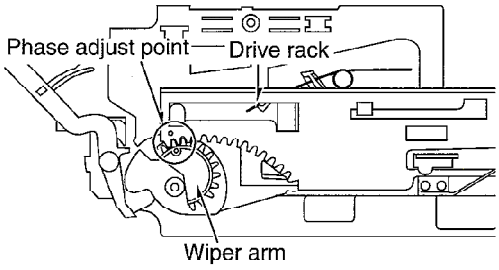


Fig. F5

TOP VIEW

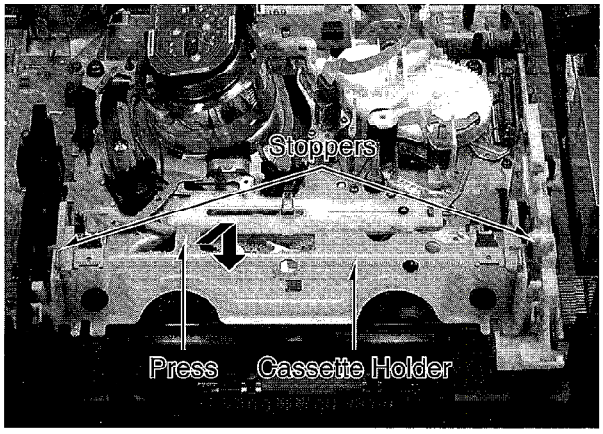


Fig. F6

(3) Assembly of Cassette holder

Install Cassette holder so that Cassette holder fits the groove of Waper arm installed in Main shaft (Fig. F6, F7).

TOP VIEW

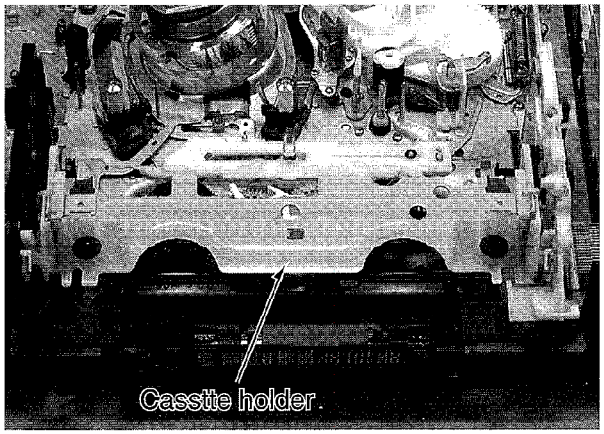


Fig. F7

(4) Assembly of Top plate

Install Top plate so that Top plate fits the groove of Left and Right side plate.

※ Fix Top plate by tightening screw when the tabs of Left and Right side plate broke (Fig. F8)

TOP VIEW

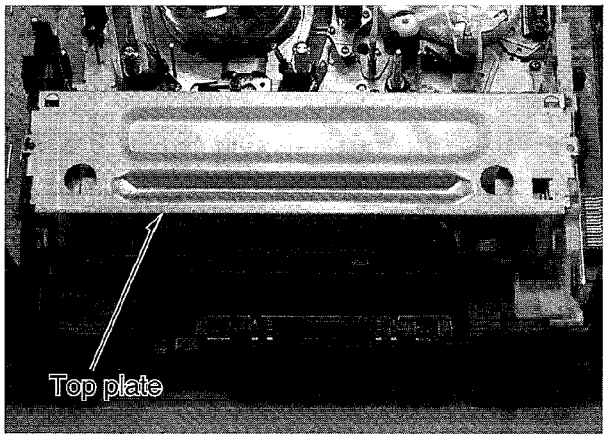
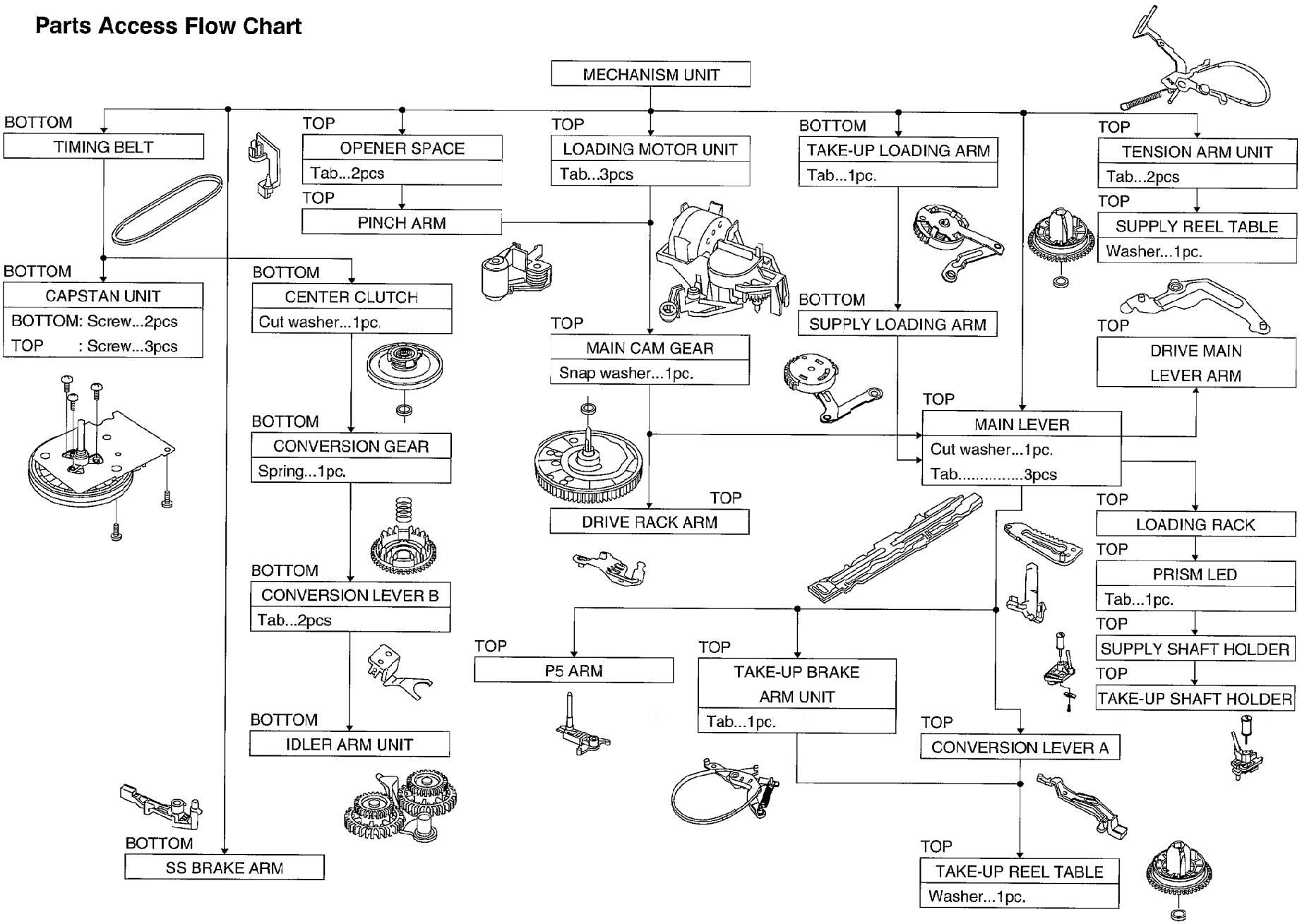


Fig. F8

(5) Install Front panel unit and Top panel

Parts Access Flow Chart



5. MECHANICAL ADJUSTMENT PROCEDURE

5-1. Tension post position adjustment

Equipment required: Hex. Wrench (VFK0326)
Specification: 50.5±1.5 mm

(1) Disconnect the AC plug.

(2) Remove the TOP PLATE.

(3) Turn the LOADING MOTOR until the loading completes.

(4) Adjust the hole of Tension Band Fastener by Hex Wrench until the distance between the Tension Post and the center of Supply reel table is 50.5±1.5 mm as shown in Fig. M1.

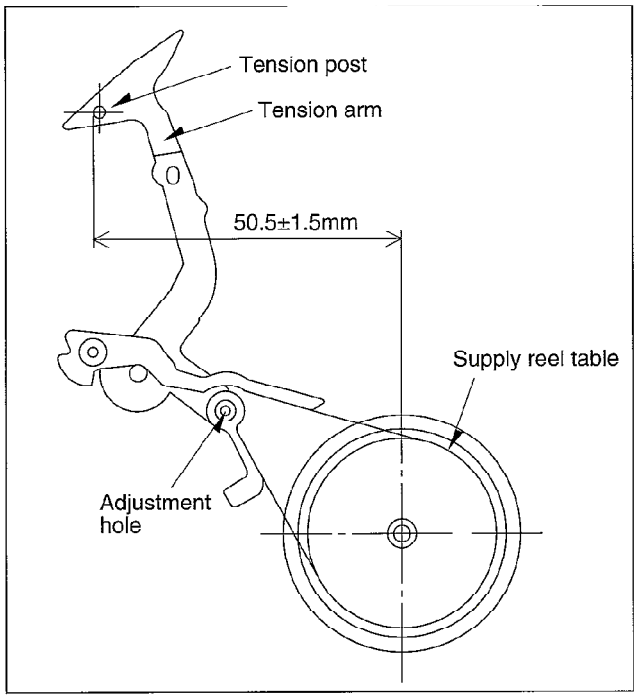


Fig. M1

5-2. Back tension adjustment

Equipment required:
Back Tension Meter (VFK0132)
VHS Cassette tape (180 minutes tape: PAL)
VHS Cassette tape (120 minutes tape: NTSC)
Specification: 22.5–27.5g

(1) Playback the cassette tape from the beginning and wait until the tape movement get the stabilization. (for approx. 10–20 seconds)

(2) Insert the Back Tension Meter into the path of a tape, and measure the back tension to be within specification as shown in Fig. M2.

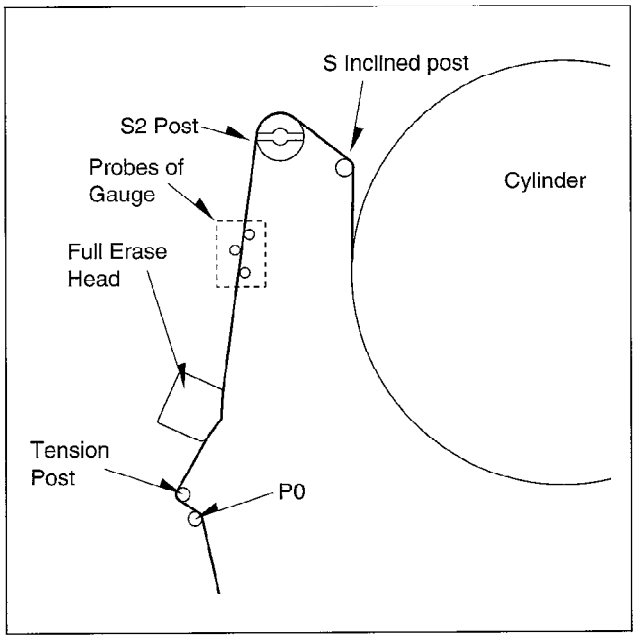


Fig. M2

(3) If it is out of specification, change the spring notch as shown in Fig. M3.

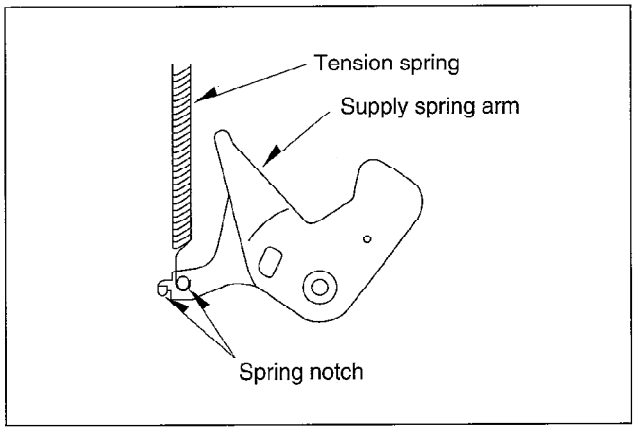


Fig. M3

5-3. P2 and P3 posts adjustment (PREADJUSTMENT)

Equipment Required:
Post Adjustment Screwdriver (VFK0329)

(1) Remove the Top Plate.

(2) Turn the Loading Motor until the unloading completes.

(3) Rotate the P2 and P3 Posts clockwise to the end. (Fig. M4)

(4) Rotate the P2 and P3 Posts twice counterclockwise. (Fig. M4)

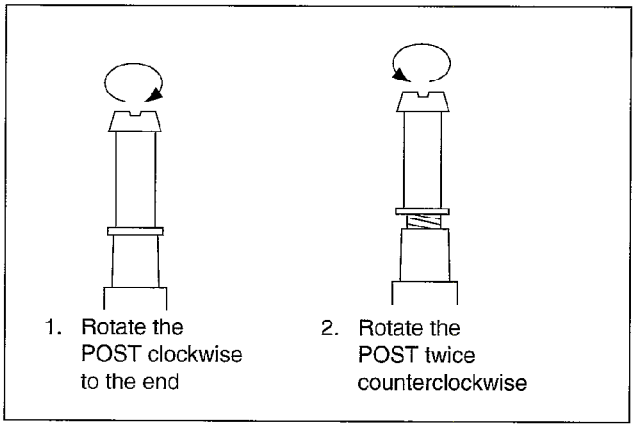


Fig. M4

(5) Playback the cassette tape and make sure that the edges of the tape are not curling at the bottom or top end of the P2, P3, and P4 Posts as shown in Fig. M5.

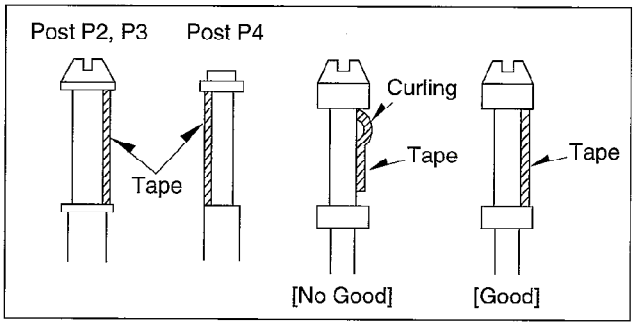


Fig. M5

(6) If the curling appears, readjusts the P2 and P3 Posts.

5-4. Tape interchangeability adjustment

Carry out the following procedures for Tape Interchangeability Adjustment to do it correctly and smoothly.

(1) P2 AND P3 POSTS ADJUSTMENT
(2) ADJUSTMENT OF P4 POST
(3) HEIGHT ADJUSTMENT OF A/C HEAD
(4) FINE-ADJUSTMENT OF A/C HEAD
(5) ADJUSTMENT OF X-VALUE (PREADJUSTMENT)
(6) FINE-ADJUSTMENT OF X-VALUE

If the Tape Interchangeability Adjustment is not perfect, repeat the above procedures from (1) to (6).

CAUTIONS: To make an Adjustment Mode for Tape Interchangeability, press the FF, REW and EJECT buttons simultaneously 3 times to set the Service Mode 2.

NOTE: Cleaning the Tape Transport path before adjusting of Tape Interchangeability. The detail portion is shown below.

P0 Post, Tension Posts, FE Head, P2 Post, Supply Inclined Post, Cylinder Unit, Take-up Inclined Post, P3 Post, A/C Head, P4 Post, Pinch Roller, Capstan Shaft, P5 Post. FE Head, Cylinder Unit, A/C Head and Capstan Shaft are more important parts and pay an attention to clean them.

5-4-(1). P2 AND P3 POSTS ADJUSTMENT

Equipment required:
Alignment Tape (PAL/SECAM: VFJ8125H3F)
(NTSC: VFM8080HQFP)
Post Adjustment Screwdriver (VFK0329)

(1) Connect the oscilloscope to the output of the Head Amp as shown in Fig. M6.

NOTE: To get a stable waveform of the Head Amp output (observation point TW3001 and TW2001 located on Main C.B.A.) on the oscilloscope, use the head switching pulse as a triggering signal as shown in Fig. M6.

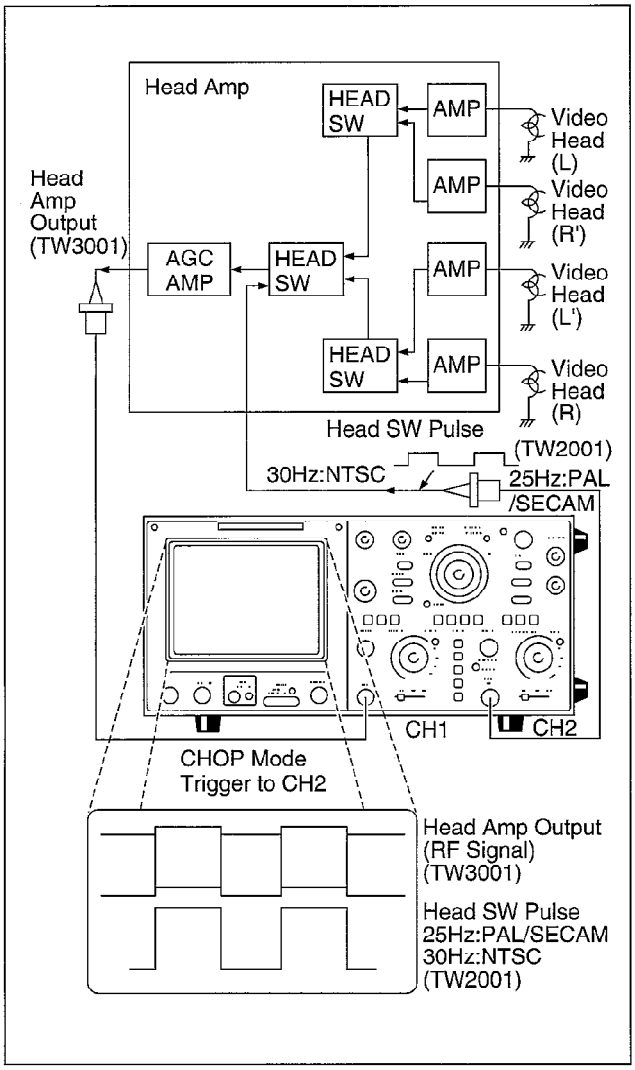


Fig. M6 Connect of Oscilloscope

(2) Playback the Alignment Tape.

(3) If the RF envelope appears like example "A" or "B" in Fig. M7, then adjustment of the tape guide post (P2: Entrance) is necessary.

(4) Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig. M7 "C".

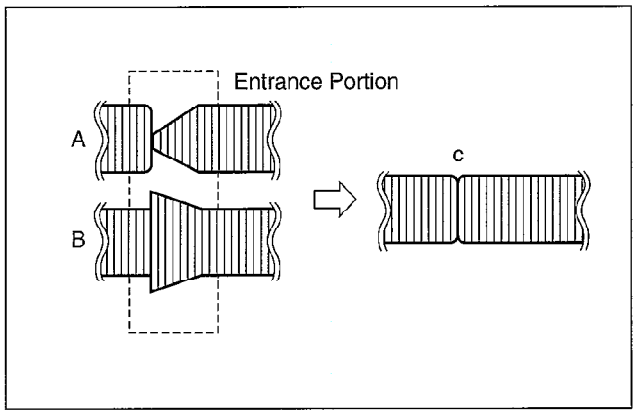


Fig. M7

(5) If the RF envelope appears like "D" or "E" in Fig. M8, then adjustment of the tape guide post (P3: Exit) is necessary.

(6) Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Fig. M8 "F".

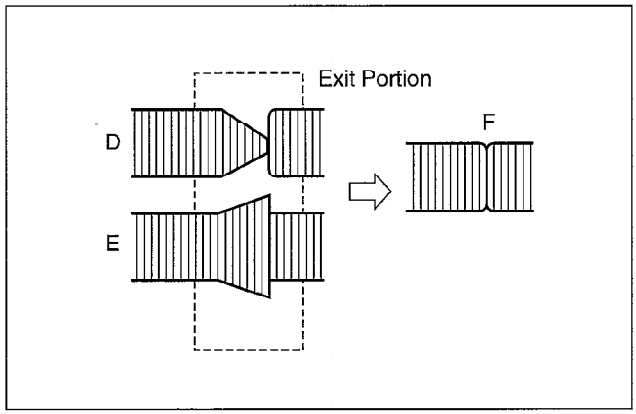


Fig. M8

(7) Keep pressing the tracking up/down (∧ or ∨) buttons on the remote controller unit. The output envelope should vary nearly parallel with other condition as shown in Fig. M9.

(8) Set the tracking control into center fix position by pressing the tracking up/down (∧ and ∨) simultaneously and adjust for maximum RF envelope, whilst being as flat as possible.

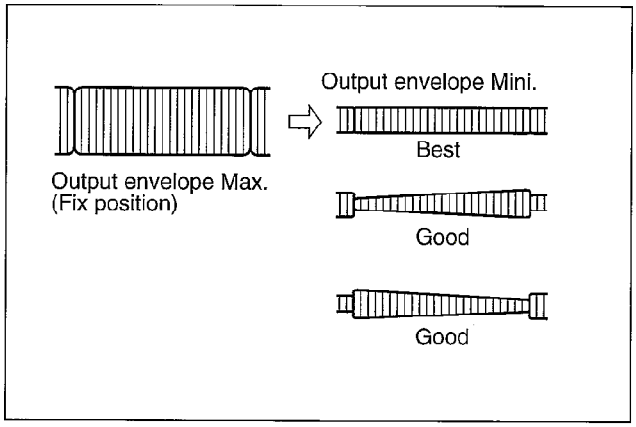


Fig. M9

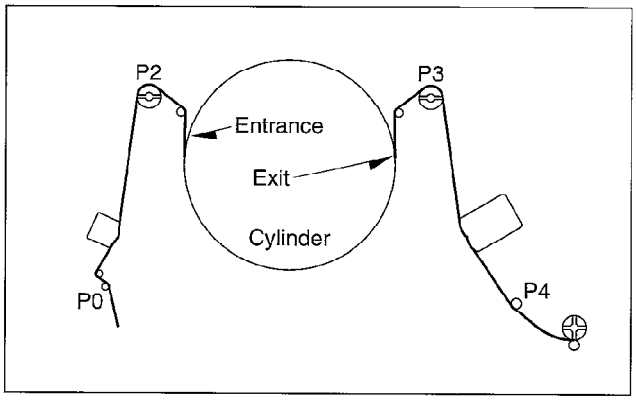


Fig. M10 Loading of Posts

5-4-(2). ADJUSTMENT OF P4 POST

(1) Install A/C Head on the Mechanism Chassis by one screw.

(2) Playback the Alignment Tape.

(3) Rotate the screw (A) or (B) until the wrinkle appears on the lower edge of tape at P4 Post.

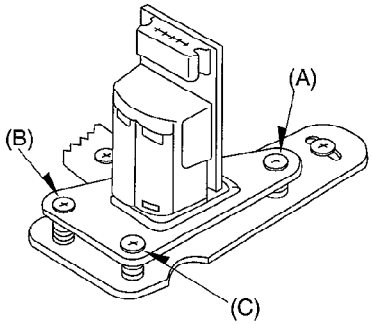
(4) Rotate the screw (A) or (B) until the wrinkle just disappears on the lower edge of tape at P4 Post.

(5) Connect the oscilloscope to audio output terminal.

(6) Rotate the screw (C) until audio signal is maximized.

NOTE: 1. The relation between the rotation direction of screws (A) and (B) and the condition of wrinkle on the lower edge at P4 Post as shown in Fig. M11.

2. Make sure that there is not the inclined wrinkle between P4 Post and Pinch Roller.



	SCREW (A)	SCREW (B)
So wrinkle appears on the lower edge of tape	COUNTER CLOCKWISE	CLOCKWISE
So wrinkle disappears on the lower edge of tape	CLOCKWISE	COUNTER CLOCKWISE

Fig. M11

5-4-(3). HEIGHT ADJUSTMENT OF A/C HEAD

<When moving the A/C Head up>

(1) Rotate the screw (A) counterclockwise until the wrinkle appears on the lower edge of tape at P4 Post.

(2) Rotate the screw (B) counterclockwise until the wrinkle just disappears on the lower edge of tape at P4 post.

(3) Rotate the screw (C) counterclockwise until the audio signal is maximized.

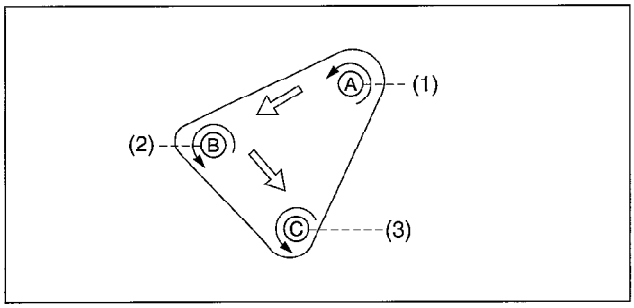


Fig. M12

<When moving the A/C Head down>

(1) Rotate the screw (B) clockwise until the wrinkle appears on the lower edge of tape at P4 Post.

(2) Rotate the screw (A) clockwise until the wrinkle just disappears on the lower edge of tape at P4 post.

(3) Rotate the screw (C) clockwise until the audio signal is maximized.

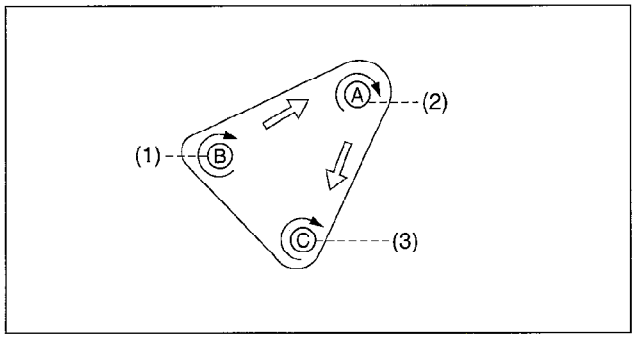


Fig. M13

5-4-(4). FINE-ADJUSTMENT OF A/C HEAD

(1) Connect the oscilloscope to the output of the Head Amp as shown in Fig. M6.

(2) Playback the Alignment Tape.

(3) Make sure that the condition of the wrinkle at P4 Post. If the condition of the wrinkle is out of specification, P4 Post adjustment has to be performed as follows.

Turn the screw (A) counterclockwise until the wrinkle appears on the lower edge of tape at P4 Post.

Turn the screw (A) clockwise until the wrinkle disappears on the lower edge of tape at P4 Post.

(4) Turn the screw (C) until the audio signal is maximized.

NOTE: Make sure that the audio output does not increase when push the upper and lower edges of tape around A/C Head.

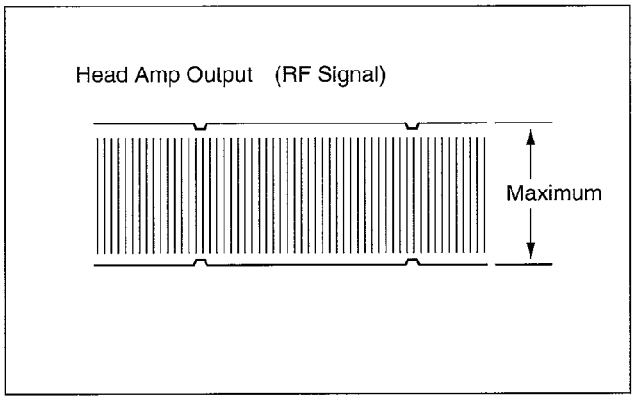


Fig. M14

5-4-(5). ADJUSTMENT OF X-VALUE (PREADJUSTMENT)

Equipment required:
Fine Adjustment Gear Drive (VFK0330)
Specification: Less than 15 msec.

(1) Connect the oscilloscope to the audio output and the video output. Both output signals should be fixed by the external trigger.

(2) Playback the Alignment Tape and set the tracking control into center fix position.

(3) Adjust A/C Head position by the Fine Adjustment Gear Driver (VFK0330) to meet the signal fault portion of the audio output and the video output signals (Less than 15 msec.).

(4) After meeting the signal fault portion, adjust A/C Head position by the Finc Adjustment Gear Driver (VFK0330) until the video envelope is maximized.

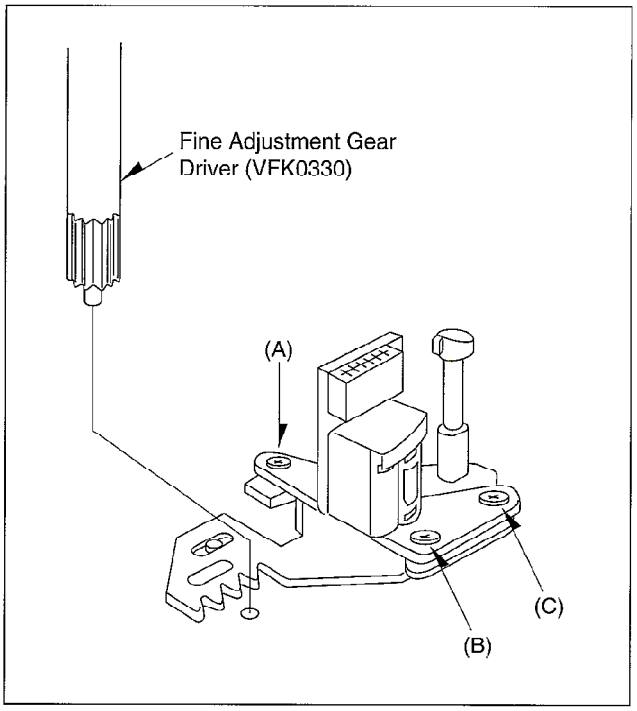


Fig. M15

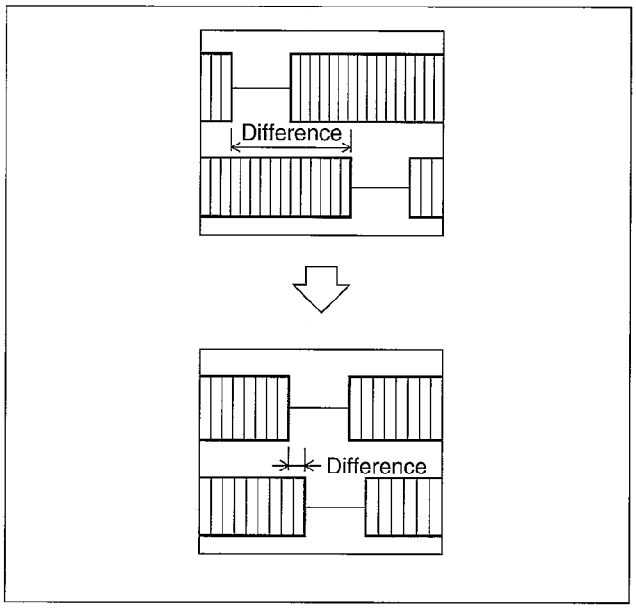


Fig. M16

5-4-(6). FINE-ADJUSTMENT OF X-VALUE

Equipment required:
Fine Adjustment Gear Drive (VFK0330)

(1) Connect the oscilloscope to the audio output and the video output. Both output signals should be fixed by the external trigger.

(2) Playback the alignment tape and set the tracking control into center fix position.

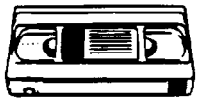
(3) Adjust A/C Head position by the Fine adjustment Gear Driver (VFK0330) until the video envelope level is maximized at the tracking center fix position.

NOTE: During X-Value Fine Adjustment, in case the video envelope level became 0, Preadjustment of X-value should be adjusted again due to it is possibility to vary the X-value adjustment.

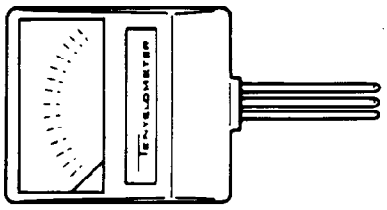
Servicing Fixtures & Tools

VFJ8125H3F
PAL VHS Alignment Tape

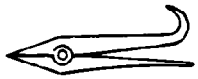
VFM8080HQFP
NTSC VHS Alignment Tape



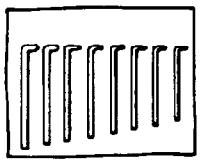
VFK0132
Back Tension Meter
(Tentelometer, Made in U.S.A.)



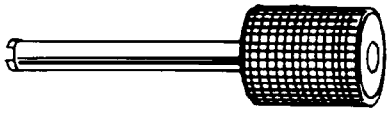
VFK0335
Retaining Ring Remover
(3mm/4mm)



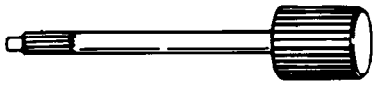
VFK0326
Hex. Wrench Set
(0.7, 0.9, 1.2, 1.5, 1.6, 2.0, 2.4, 3.0mm)



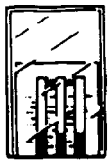
VFK0329
Post Adjustment Screwdriver



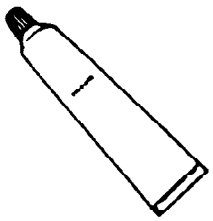
VFK0330
Fine Adjustment Gear Driver



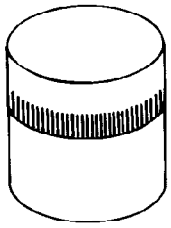
VFK27
Hand Cleaning Stick



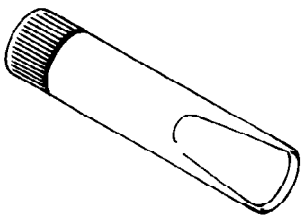
VFK1024
Morlytone Grease



VFK1298
Floil Grease



VFK1301
Silicone Grease



6. SELF-TEST INDICATION DISPLAY

This VTR has a self-diagnosis and display function. If the VTR detects trouble during installation or during use, one of the following fault indication codes will automatically appear in the VTR display. Fault indication codes are displayed in the form of a single English letter followed by two numbrs, as for example "H01".

Note: 1. The indication "U" is displayed on the FIP while power remains on.

2. Otherwise, the indication "H" or "F" is displayed on the FIP, and the power is automatically turned off

   When the power is turned on again, the fault indication code will disappear and the unit will retrun to normal display mode (either clock or counter is displayed).

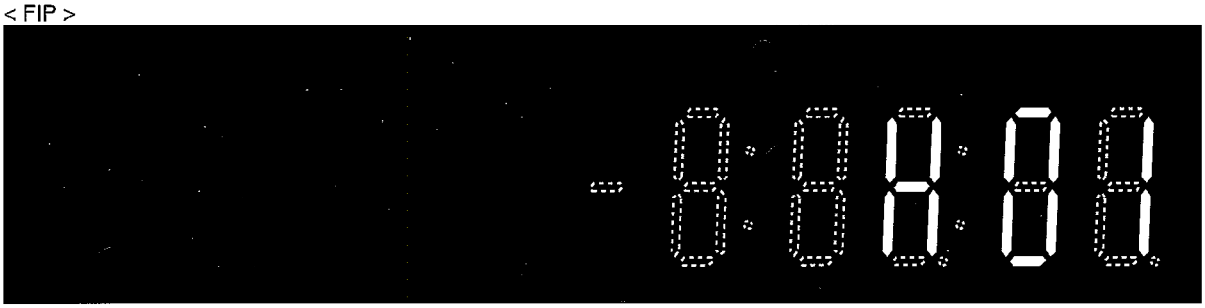
3. This fault indication code will be stored in the Timer microprocessor even with the AC plug disconnected.

   The two-digit number portion of the stored fault indication code can be redisplayed in the FIP's "second" display portion (the last 2 digits on the light) by placing the unit is Service Mode Number 2 when turning on Service Information Display as for example "01" or "02" etc.

   If a second error occurs, only the most recent error will be displayed and stored.

4. To erase the stored fault indication code data, Press FF, REW and EJECT buttons for 5 seconds.

< FIP >



INDICATION	CAUSE	REMEDY/CHECK
U 10	Dew formation.	Wait until the indication disappears.
U 11	Cylinder clogs during the play mode.	Cleaning the cylinder.
H 01	After cylinder lock is detected, the cylinder does not start rotating again even after tape unloading.	Check the cylinder motor drive circuit.
H 02	Cassette tape is not wound up during tape unloading except Eject mode.	Check the capstan motor drive circuit.
F 03	Mechanism locks during mode transition except Eject mode.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment. 3. Check the mode switch.
F 04	Mechanism locks during tape unloading.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment.
F 05	Cassette tape is not wound up during tape unloading in Eject mode.	1. Check the capstan motor drive circuit. 2. Check the Supply/Take-up reel pulse.
F 06	Mechanism locks after tape unloading in Eject mode.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment for cassette holder unit.
F 07	During recording mode recording signal is less than the normal condition.	Protection of the overcurrent flowing in transistor which produce the power supply for recording mode.
F 09	No communication of the main serial (between the system control and FIP driver control).	Check the system control microprocessor.

Fig. T1 Self-Test indication Display

7. SERVICE INFORMATION DISPLAY

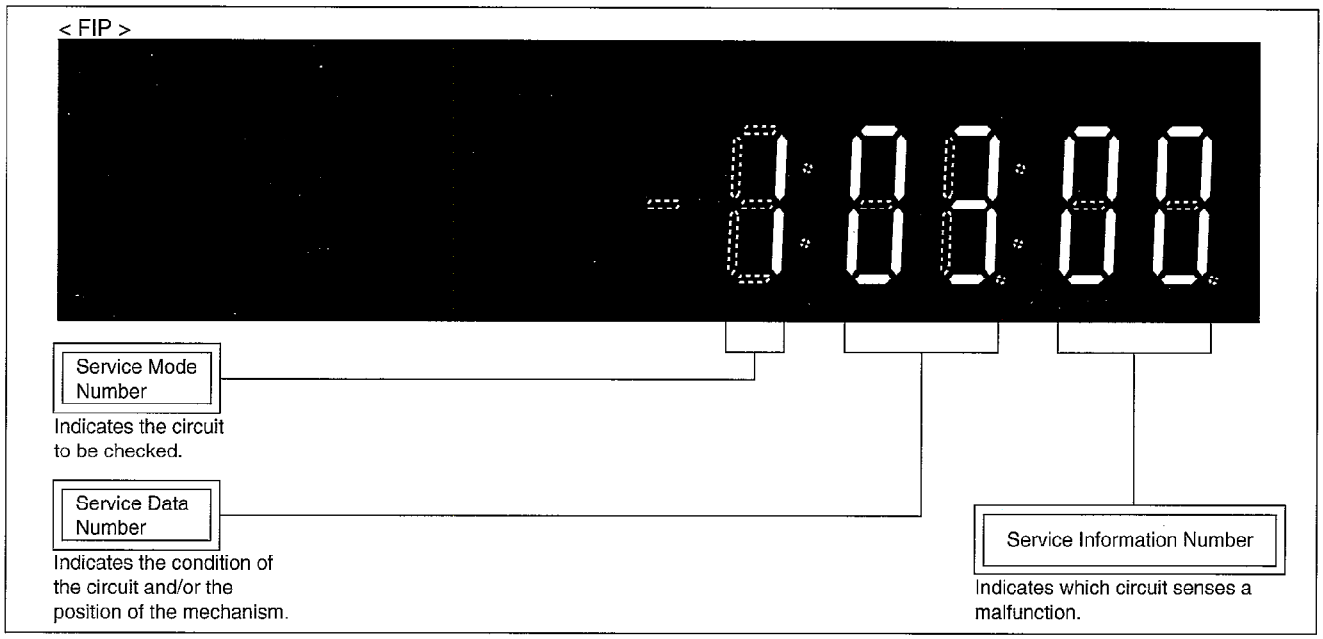

< FIP >
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicates the condition of the circuit and/or the position of the mechanism.
Service Information Number
Indicates which circuit senses a malfunction.

Fig. D1 Service Information Display

7-1 Purpose of Service Information Display

This information aids trouble shooting by indicating the source of the malfunction. The service mode number & service data number are used by the technician during repair while the service information can be used by consumer to diagnose malfunctions allowing the technician to provide a more accurate repair cost estimate and reduce repair time.

7-2. Turning on Service Information Display

Press FF, REW and EJECT buttons simultaneously.

In the Service Information Display, there are four digits divided into 3 functions.

The first digit indicates which of the 7 service modes that the unit is currently in.

MODE 1: Checks tape protection circuit.

MODE 2: Checks tape transport mechanism.

MODE 3: Checks mode switching operation.

MODE 4: Checks control buttons.

MODE 5: Checks capstan motor.

MODE 6: Checks cylinder motor.

MODE 7: Checks loading/unloading operation.

The second and third digits are service data which indicate the condition of the circuit or mechanism being checked.

The forth digit is the service infromation display. it is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is not supplied.

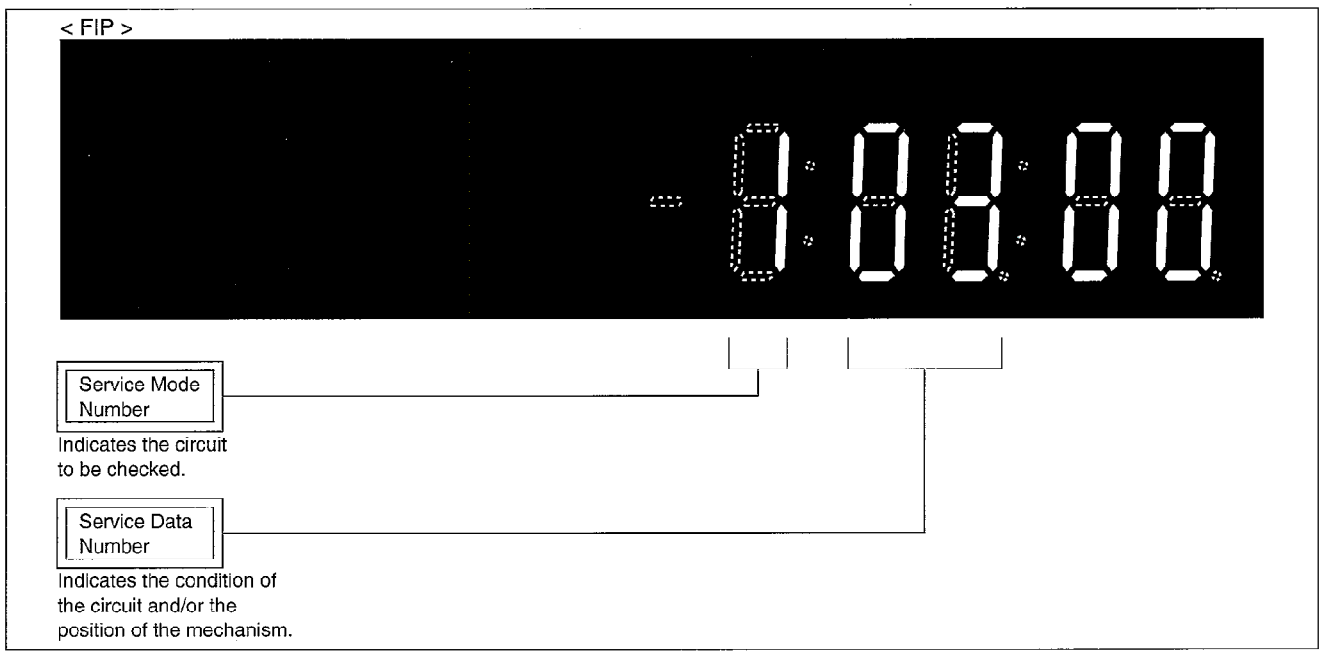

< FIP >
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicates the condition of the circuit and/or the position of the mechanism.

Fig. D2 Service Mode Number and Service Data Number on F.I.P.

7-3. Use of Service Modes

(1) Turn on Service information Display.

(2) To change Service Modes Press FF, REW and EJECT buttons simultaneously.

(3) Mode 0: Not used.

(4) Mode 1: Checks that the sensor LED, Supply & Take-up sensor circuits checks the circuits by blocking the light from the sensor LED to either or both Supply & Take-up Sensors. When the light is blocked to both sensors, "00" should be indicated on the service data number.
When the light is blocked to the supply sensor, "01" should be indicated.

(5) Mode 2: Checks the mode switch circuit while indicating mechanism position.
Service Data Numbers indicate the position of the mode switch and there by the mechanism position.

(6) Mode 3: Checks that mode switch circuit operations have been completed.
Service Data Number should indicate "00" after each mechanism operation is completed.

(7) Mode 4: Checks the operation circuit.
Indicates if SYSTEM CONTROL IC receives the operating commands from the mode buttons and/or remote controller.

(8) Mode 5: Checks the capstan motor circuit.
Indicates if the SYSTEM CONTROL IC has received the command to rotate the capstan motor.

(9) Mode 6: Checks the cylinder motor circuit.
SYSTEM CONTROL IC has received the command to rotate the cylinder motor.

(10) Mode 7: Checks the loading/unloading operation.
The loading motor rotates for loading operation when the "PLAY" button is pressed.
The loading motor rotates for unloading operation when the "STOP" button is pressed.
This mode can be displayed indefinitely until the OPERATE button is pressed.

<NOTE> Refer to Fig. D5 for details of Service Data Numbers.

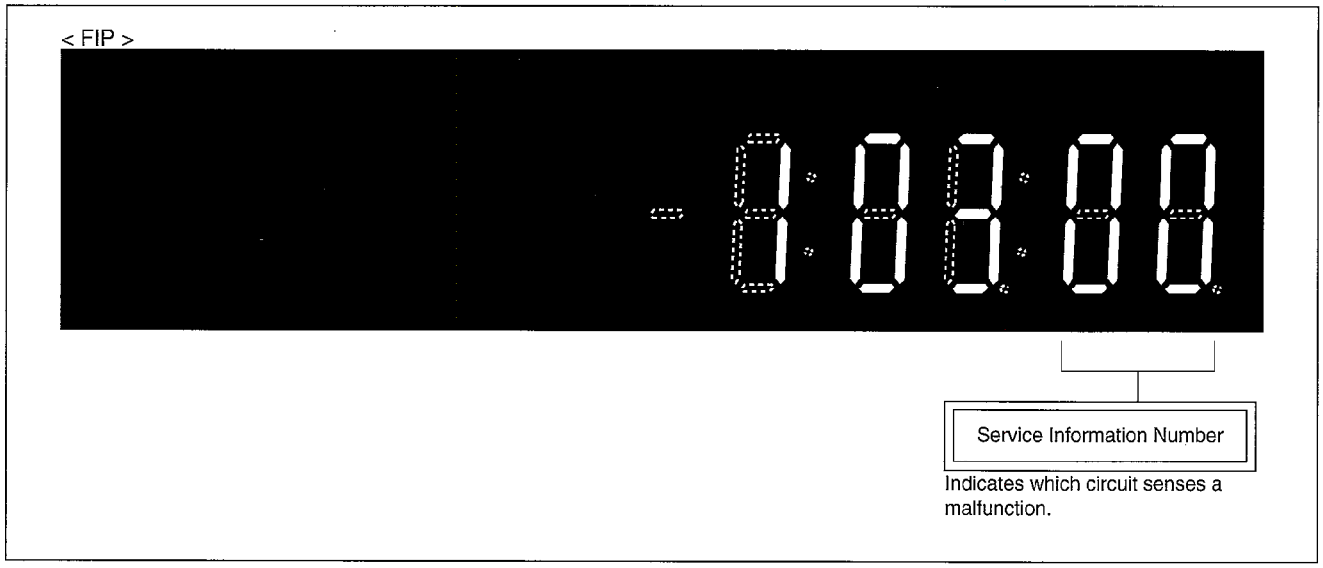


Fig. D3 Service Information Number on F.I.P.

7-4. Service Information Number

Refer to Fig. D4 for details of Service Infromation Number.

NOTE: The Service Information Number display is independent of the service mode display. The Service Information Number will be stored as long as AC power is not supplied (If can be displayed in the Service Mode 2.)

If a second error occurs, only the most recent error will be displayed.

Service Information Number	Malfunction
00	Normal condition (No problem)
01	Cylinder stop
02	Tape reel stop
03	Stop at position other than 04 or 06
04	Stop during unloading
05	Fault capstan rotation
06	Stop during Cassette-in/Eject operation
09	Fault of the main serial communication (Between system control and FIP driver)

Fig. D4 Detail Service Information Number

7-5. Test Mode

When the test terminals are shorted during turning off condition, the following operation will be performed after AC power is applied. Test Mode Information will be displayed on FIP insted of lincar counter.

(1) Power will be turned on automatically when AC power is applied.

(2) The direct operation of buttons are able to be performed.

(Examle) PLAY⟷REC, REC⟷EJECT

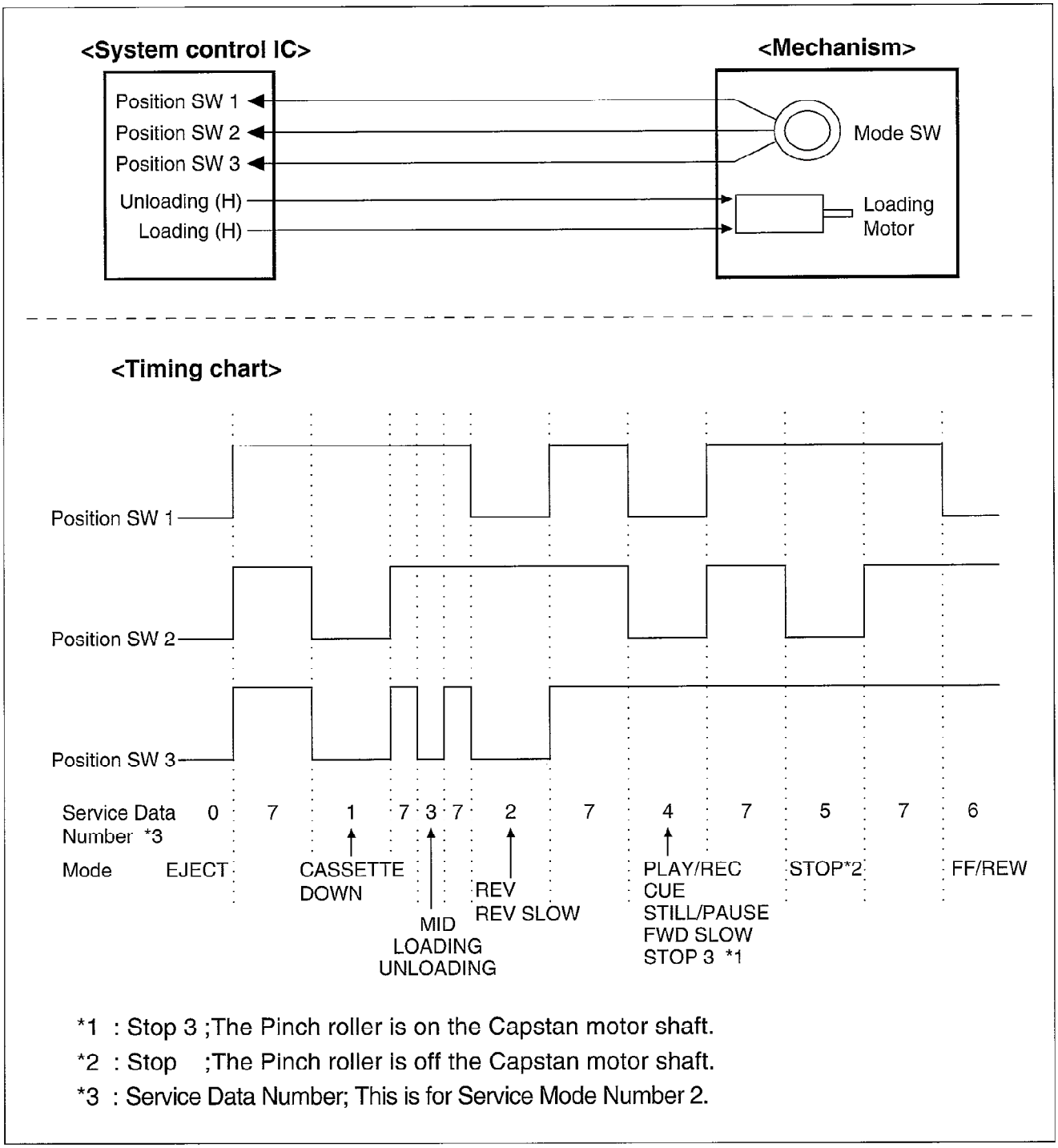
Service Mode Number	Note for checking Service Data Numbers	Service Data Numbers	Indication	Remarks
1	—	00	No light detected at either sensor	Tape not required.
		01	Tape beginning Light to Supply photo sensor is blocked.	
		02	Tape end Light to Take-up photo sensor is blocked.	
		03	Light detected at both sensors.	
2	—	00	EJECT	Tape required *1. STOP3: Pinch roller is on Capstan motor shaft. *2. STOP: Pirtch roller is off Capstan motor shaft.
		01	Cassette down	
		02	REV, REV SLOW	
		03	Loading/Unloading	
		04	PLAY, REC, STILL, PAUSE, CUE, FWD SLOW, STOP3*1	
		05	STOP*2	
		06	FF/REW	
		07	Intermediate position	
3	Disregard service data displayed until mechanism operation is completed. Then the display should indicate "00".	00	Any display other than "00" indicates a fault in the mode switch circuit or system.	Tape required.
4	Display only when the operating button is pressed.			Tape not required.
5	Left digit only, disregard Right digit display.	8 1 Left Right Digit Digit	8, 9, u, A, —, n, L and no display indicate that the Capstan motor "PLAY" command received by System control microprocessor.	Tape required. If a symbol other than those listed is displayed, a mulfunction in that circuit is indicated.
	Right digit only, disregard left digit disoaly.	8 7 Left Right Digit Digit	1, 2, 3, 4, 5, 6, 7 indicate that the Capstan motor "CUE, FF, FWD SLOW" commands received by system control microprocessor.	
	Right digit only, disregard left digit display.	8 — Left Right Digit Digit	8, 9, u, A, —, n, L and no display indicate that the Capstan motor "Reverse, REW, Reverse Slow" commands received by system control microprocessor.	
6	Left digit only, disregard Right digit display.	1 0 Left Right Digit Digit	1, 3, 5, 7, 9, A, n and no display indicate that the cylinder motor "ON" command received by system control microprocessor.	Tape required. If a symbol other than those listed is displayed, a mulfunction in that circuit is indicated.

Fig. D5 Service Data Display and Indication

7-6. Timing chart from Mode SW to System control IC

System control IC senses the mechanical position through the Mode SW.

Fig. D6 shows the timing for service mode number 2.



*1 : Stop 3 ;The Pinch roller is on the Capstan motor shaft.

*2 : Stop ;The Pinch roller is off the Capstan motor shaft.

*3 : Service Data Number; This is for Service Mode Number 2.

Fig. D6 Timing chart of Mode SW

8. SYSTEM CONTROL CIRCUIT & MECHANISM CONTROL CIRCUIT

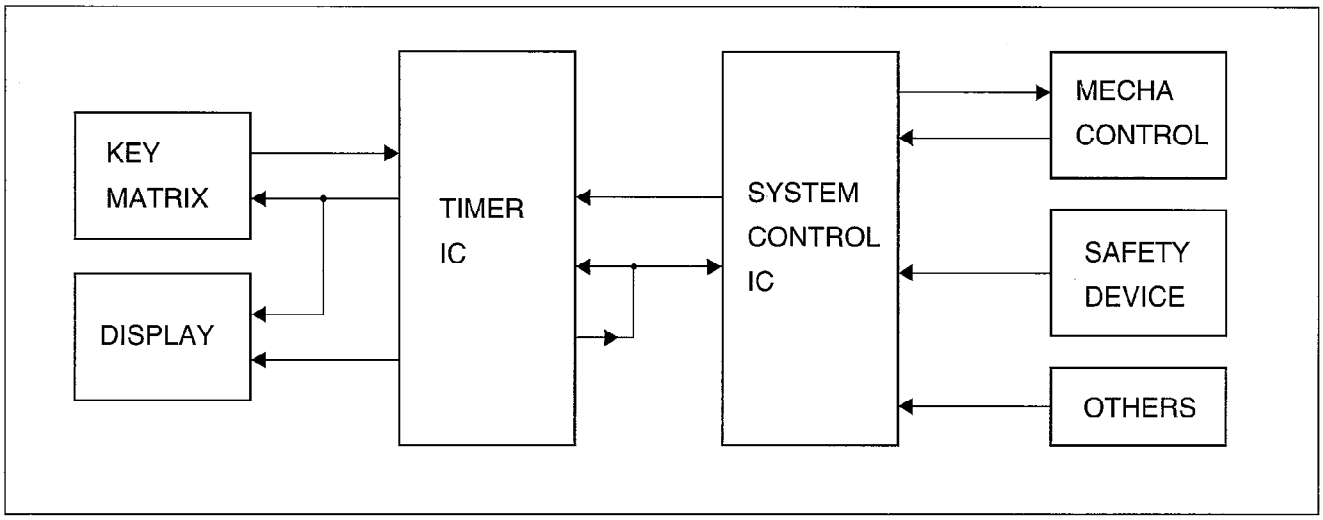


Fig. S1 Overall Block Diagram of System Control Circuit

8-1. STOP3 Specification

(1) The STOP3 is the playback stand-by mode.

(2) The unit is put into the STOP3 position after tape loading if the cassette tape does not have a clear leader tape.

(3) If the unit is in the STOP3 position when the power is switched off (included the Timer stand-by mode), the unit goes to the STOP position.

(4) If the cassette is in the unit when the power is turned on, the unit goes to the STOP3 position.

(5) When the cassette tape has clear leader tape, the unit is in loading mode after winding up the clear leader tape by Take-up reel at the cassette down position and the unit goes to STOP3 position.

8-2. Stand-by in the STOP3 position

(1) The unit goes to STOP3 position when the Stop mode is selected during the Play or Rec operations. The unit then loosens the tape tension by performing the Reverse Slow.
The Reverse Slow corresponds to the FG 40 pulses of the capstan (irrespective of SP/LP modes). The cylinder continues to rotate.

(2) After about 10 minutes in STOP3 mode, the unit shifts to the Stop position and the cylinder continues to rotate.

(3) After about 10 minutes in STOP mode, the unit stops the cylinder rotation.

8-3. Supply and Take-up Sensors

Supply and Take-up photo transistors are used to sense the beginning and end of a tape. The tape has transparent leaders at the beginning and end.

When these transparent leaders enter the tape transport path, they allow infrared light from the sensor LED to reach either one of the tape end sensors (photo-transistor).

If the Take-up end sensor detects the light, the microprocessor SYSTEM CONTROL IC places the VCR in the Stop mode and then performs a short Cue.

If the Supply end sensor is triggered, the microprocessor activates the Stop mode and the Rewind mode. The Rewind mode continues until the Take-up end sensor detects the end of the tape. The tape beginning is detects by a low signal at SYSTEM CONTROL IC Take-up photo terminal. The tape end is detected by a low signal at SYSTEM CONTROL IC Supply photo terminal.

If the light is received at both sensors at same time, the cassette is ejected.

<Operation after detecting the beginning and the end of tape>

Mode	Detection of the beginning	Detection of the end
Power on→off	Short CUE	Short REW
Cassette in	Short CUE	Short REW
Loading	Short CUE	Short REW
FF/CUE	——	Auto REW
REW/REV	Short CUE	——
PLAY, REC	——	Auto REW
SLOW	——	Auto REW
Timer REC	——	Power off

Both ends of tape detection (tape cut, no cassette),

(1) Cassette in: The cassette tape is ejected

(2) Other mode: The unit goes to Stop mode and it is impossible to operate except EJECT key.

(3) Timer REC: Power is turned off after short CUE is performed

8-4. Safety Tab Switch

A recorded video cassette can be protected against accidental erasure by breaking off the tab on the cassette. The cassette can now only be used for playback. To be able to record on the cassette, cover the hole with adhesive tape. If the safety tab on the cassette has been removed, Safety Tab Switch is off (open) and high signal is supplied to SYSTEM CONTROL IC Safety Tab terminal. The SYSTEM CONTROL IC will not go into the recording mode and automatically places the VCR in the playback mode.

8-5 Dew Sensor

If excessive moisture or condensation is present inside the machine (an internal humidity of more than 98%) the unit will stop if running. Until the moisture level decreases only the Eject mode will operate. To sense the humidity, a dew sensor is used. The sensor is a special variable resistor which change resistance with ambient humidity.

The sensor ranges in resistance from about 5K ohm at 90% humidity to about 50K omh at 98% humidity. Normally, the voltage across the sensor is low because of its low resistance.

But if moisture condenses inside the unit, the SYSTEM CONTROL IC voltage of Dew terminal increases to indicate a Dew condition.

Tape	Mode	Dew sensor ON	Dew sensor OFF
OUT	Power	Compulsory Power on	Power off
	Dew indication	Indicate "d" and "U10"	No indication
	Cylinder	Rotating *1	Stop
	Key operation	Not possible *2	Possible
	Cassette in	Immediately a cassette is ejected after it goes to cassette down position.	Possible
IN	Power	Compulsory Power on	Power off
	Dew indication	Indication "d" and "U10"	No indication
	Cylinder	Rotating *1	Stop
	Key operation	Not possible *2	Possible
	Cassette condition	A cassette goes to down position and is in stand-by mode.	Stand-by mode at STOP3 position.

*1: When the cylinder locks in dew mode, it will be released until dew sensor is truned off.

*2: The keys which do not relate to the tape running operation, are able to be used.

Dew sensor on: During Dew formation is detected and 80 minutes after completion of Dew detection.

Dew sensor off: 80 minutes later after copmletion of Dew detection.

8-6. Setting time for each mode

The time is set on each mode in order to protect tape and capstan driver. When the setting time is over, the mode is gone to the next mode.

Mode	Setting time	Switching mode
STILL, PAUSE	Approximately 5 minutes	STOP
CUE/REV lock	Approximately 10 minutes	PLAY
SLOW, F ADV	Approximately 10 minutes	STOP

8-7. Operation of short CUE

Short CUE stops when the Take-up photo sensor detects the black portion of the tape.

However its sensor does not detect the black portion within 4.0±1.0 sec., the mode except Power on/off and Eject modes will be abe to be operated after the unit stops. This is same as the timer over oeration of the reel lock.

8-8. Loading/Unloading Mechanism lock

Loading and unloading times are set, and in case the mechanism locks during loading or unloading operation within the defined time, the unit detects the mechanism lock and loading motor reverses or stops.

Loading operation lock: Cassette tape is unloaded and ejected within 5 seconds.

Unloading operation lock: Power is truned off within 5 seconds.

8-9. Cassette loading/unloading lock

(1) Mechanism locks during the cassette in operation.

① Cassette tape is ejected approximately 2 seconds later when the mechanism locks during the cassette in operation.

② In case mechanism locks during eject operation, cassette tape is inserted and power is turned off approximately 2 seconds later.

③ When Mechanism locks during cassette in operation, power is turned off approximately 2 seconds.

In case the mechanism lock is released on thc way and cassette is ejected, the unit continues the normal operation.

(2) Mechanism locks during the eject operation.

① Cassette tape goes to cassette down position approximately 2 seconds later and power is turned off when mechanism locks during eject operation.

② Mechanism locks during cassette down operation, power is turned off.

8-10. Reel lock operation

When the Suuply or Take-up reel mechanism locks during the tape running, the following operation is performed.

FF/REW : Unloading and loading. The unit goes to CUE/REV mode.

PLAY/CUE/REC : Unloading till the cassette down position and loading. The unit goes to STOP3 position.

RVS PLAY/REV : Unloading till the cassette down position and loading. The unit goes to STOP3 position.

The reel pulse cycle is started to count after the mechanism mode is fixed.

In case the counted pulse cycle exceeds the defined value, the unit goes to STOP mode due to judge that lock of reel mechanism is detected.

<The value of reel lock detection time>

NTSC/SP mode

Mode	Speed (Ratio)	Time (S)
PLAY	±1	3.5
CUE/REV	±5	1.6

PAL/SP mode

Mode	Speed (Ratio)	Time (S)
PLAY	±1	3.5
CUE/REV	±5	1.6

The reel lock time in FF/REW mode is 800msec.

When the tape speed is less than 0.23m/s, reel lock is judged.

8-11. Cylinder lock

<Start rotation>

When the cylinder neither start rotating nor go to the stability rotation within 5 seconds, it is unloading under keeping the mode. In case the cylinder starts operating and stability rotation, the mechanism goes to STOP3 position.

If it is not possible, Power is turned off and cylinder trouble "H01" is displayed.

<During rotation>

The head switching pulse is supplied to the cylinder when the cylinder starts the stable revolution. In case the head switching pulse comes to the cylinder within 0.5 seconds, the cylinder lock is judged and the following operation is activated.

Timer REC: Power off

PLAY, REC: STOP

8-12. Mode transition

The relation between the present mode and operation key is shown in the following table.

PRESET MODE	OPERATION KEY							
	P SW	EJECT	STOP	REW	FF	PLAY	PAUSE	REC
P-OFF	P-ON	EJECT	——	——	——	PLAY	——	——
EJECT	P-OFF	——	——	——	——	——	——	——
STOP	P-OFF	EJECT	——	REW	FF	PLAY	——	REC
REW	P-OFF	EJECT	STOP	REV	FF	PLAY	——	——
FF	P-OFF	EJECT	STOP	REW	CUE	PLAY	——	——
REV	P-OFF	EJECT	STOP	——	CUE	PLAY	STILL	——
CUE	P-OFF	EJECT	STOP	REV	——	PLAY	STILL	——
PLAY	P-OFF	EJECT	STOP	REV	CUE	——	STILL	——
STILL	P-OFF	EJECT	STOP	REV	CUE	PLAY	PLAY	REC PS
REC	P-OFF	——	STOP	——	——	——	REC PS	*1
REC/PS	P-OFF	——	STOP	——	——	——	REC	——

*1: VISS WRITE

Pressing two keys simultaneously, the key operation is going to be ineffective.

In case the unit goes to CUE/REV lock mode by pressing FF/REW key lightly during Play mode, CUE/REV mode will be returned previous mode when FF/REW key is pressed more than 0.7 seconds.

8-13. Power on reset

When the power is turned on, the unit is going to reset and the following datas are cleared.

(1) Position switch data

(2) Operation mode data

(3) Prohibition flags

In case the mechanism is in cassette down position, tape slag is removed as the initial operation and the unit goes to STOP3 position.

8-14. Linear time counter operation

The counter value will be gone up/down by counting control pulse. As for NTSC system during Play/Rec mode, counter value goes up/down every 30 pulses. As for PAL system during Play/Rec mode, counter value goes up/down every 25 pulses.

8-15. Tape speed in CUE/REV mode

	NTSC	PAL
Standard	9 times	11 times

8-16. Automatic functions

(1) Automatic Power on

① Under power off, when a cassette tape is inserted, power is turned on automatically and cassette tape is loaded.

② Under power off and a cassette tape has been inserted, when PLAY key is pressed, power is turned on automatically and goes to PLAY mode.

(2) Automatic play

When a cassette tape removed safety tab is loaded, the mode goes into Play mode.

(3) Automatic rewind

When tape running is reached to the end of tape, automatically goes to Rew mode and stops when tape running will be reached to the beginning of tape.

In case of Timer recording, short Rew is performed for 2 seconds and power is turned off when tape running is reached to the end of tape.

(4) Power off and Eject

Under power off and a cassette tape has been inserted, when Eject key is pressed, a cassette tape is ejected and power is turned off

8-17. CUE/REV lock mode

When FF/REW key is pressed lightly (less than 0.7 seconds) during Play mode, unit goes into CUE/REV mode. To release CUE/REV mode, FF/REW key should be pressed more than 0.7 seconds.

8-18. FR (Forward/Reverse) search mode

When FF/REW key is pressed during FF/REW mode, unit goes into CUE/REV mode.

To release CUE/REV mode, FF/REW key have to be pressed.

8-19 FF/REW speed

Maximum tape speed is approximately 3.0 m/s during the stable running.

8-20 FF/REW time

The tape running from the beginning to the end of T-120 type (E-180 type) cassette tape is able to be completed within 150 seconds.

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